Observations ON CANCER:

ITS PATHOLOGY, AND ITS RELATIONS TO THE ORGANISM AND TO OTHER MORBID GROWTHS.

Delivered before the Pathological Society of London, on the 3rd March, 1874,

BY CAMPBELL DE MORGAN, F.R.S.,

SURGEON AND LECTURER ON SURGERY AT THE MIDDLESEX HOSPITAL.

IT was with a feeling of great reluctance that, when I first received the invitation which you, Sir, and the Council of the Society did me the honour to make, I undertook to open a discussion on Cancer. I now regret that I did not leave this work to other hands; for, on reviewing the subject, I find that I can do little more than repeat opinions and arguments and surmises which are already familiar enough to members of this Society. It would, I think, have been better had the opening of the discussion been entrusted to someone out of the many who have been occupying new ground in their investigations on cancer.

The feeling, too, presses on me, that in all that relates to the nature and cause of cancer we want sufficient and accurate data on which to base our arguments. Experiment fails us; and we know nothing of the disease in its earliest stages.

Again, I felt and feel the difficulty of condensing within a reasonable compass the questions which I would submit to your consideration. It is, however, a matter of satisfaction to me that, imperfectly as I may perform my task, the Society will have the benefit of a discussion on the subject of cancer by others who have given deep attention to it.

But the subject of cancer is a wide one—far too wide to be embraced within the limits I would assign to myself; and I propose to confine myself to the question—a sufficiently large one in itself—"What are the relations of cancer to the organism, whether in its natural or its morbid condition?" Interesting, then, as is the search into the histological characters of cancer, and their likeness or unlikeness to those found in other tumours, I propose to exclude this part of the subject. Nor do I know that for our present purpose it signifies whether cancer be a development of epithelium or of connective tissue. It is of more consequence to determine the points of contact and divergence between cancer and other tumours in respect to their behaviour as living growths, and between these generally and the normal structures of the body. Nor do I propose to touch at all on the subject of the treatment of cancer: this would lead far beyond the limits which must be imposed on our discussion. I may state, also, that I have omitted all reference to names. I give my own notions, or those I have adopted from others; but I do not wish to make myself appear as tilting against observers whose opinions are more entitled to respect, perhaps, than my own.

It will be well, before considering the nature of the disease, to define what I mean by cancer. I should say that it is a malignant growth consisting of a delicate fibroid stroma, containing within its meshes aggregated but not coherent cell-elements—cells, nuclei, or granules,—generally ununiform, though often similar to natural cell-elements. By "malignant" I mean that which tends to continued spread and multiplication, irrespective of the tissue invaded,—to progressive ulceration and ultimate poisoning and exhaustion of the system. These definitions are imperfect. Cancer is not of necessity malignant; for it will sometimes retrograde, without showing any of the signs which we attach to malignancy. On the other hand, tumours which we usually consider innocent show sometimes the characters of malignancy. Under no circumstances would I limit the term "malignant" to cancer. Sarcoma, myxoma, and other forms of tumour, are often as malignant as cancer, in some forms perhaps more so.

Between cancer and other forms of tumour the main, or one main, difference is, that its component cells are free, and that they do not present a uniform type. Practically, I may observe that I agree with those who would regard any infecting growth as a cancer; and I surely believe that whatever argument applies to the subject of the origin of cancer, applies equally to that regarding the origin of any infecting tumour, perhaps of any true tumour be its nature what it may. But I believe, also, that structural peculiarity is a main factor in that destructiveness which so specially characterises cancer; and in the present argument I would limit the term "cancer" to those forms of disease which are specialised as medullary cancer, scirrhus, epithelioma, and rodent cancer. I cannot see any reason for dissociating epithelioma from cancer.

Let me say, too, that when I speak of the origin of cancer I speak only of its place of origin, whether in tissue or blood or elsewhere; not of the conditions which determine its special form of development. These conditions we may be prepared to reason on when we have found out why one atom in the germinal membrane becomes muscle, another bone, another brain. I cannot help thinking that whatever determines the special forms of development of natural structure is in operation in the development of what we call morbid growths.

The views which have been entertained as to the origin of cancer are various. We may, I think, embrace them under the following heads:—

1. That a cancer-tumour is the expression of a specific blood condition; standing in the relation to this blood condition of a secretion to its gland.
2. That a morbid material is present in the blood, which, coming into relation with an appropriate tissue, enters into combination with and causes the growth of the tumour.
3. That the disease has its origin in the constitution at large, the tumour being only the local manifestation.
4. That the disease is in its origin purely local.
5. That, though local in development, there are general or constitutional conditions favouring its occurrence.

Of these, the first three may be regarded as the prevalent opinions of surgeons.

As I shall have to use the term constitutional as distinguished from local, it will be well to define my meaning. But this it is not easy to do clearly. The constitution is the man, all that gives him his individuality. In that sense, what we should in ordinary language call a purely local affection is really constitutional—a common lipoma, for example. But that is not the sense in which the term is used in this connexion. What is meant here is an all-pervading condition which will sooner or later find its local expression in altered nutrition, in new growth, &c., which will, in their turn, be evidences of the constitutional state. All would admit a practical difference between clubbed fingers and fatty tumours.

I have omitted "parasitism" from my list of assigned causation, as I suppose no one would now maintain that the cancer elements are in the first instance altogether alien to the body, as they should be to justify the use of the term. That in its progress malignant disease resembles parasitic growth may be fully admitted.

There are strong grounds for regarding cancer as something more than a local disease. The all but certainty of its recurrence, remove it as we will; its heritability; its frequent association with other forms of irregular growth; its often rapid diffusion; its power of infecting the system,—all in fact, that we see in the life of cancer naturally lead to a belief that the disease must from the first be more than a mere local tissue change. And in one sense, and to a certain extent, I must admit that this belief is well founded.

I have mentioned hereditariness as one of the grounds for regarding cancer as not a mere local disease. I believe that cancer is more frequently inherited than is generally admitted. We find the proofs of inheritance quite often enough to allow us to reckon this as one of its factors. In a large number of cases, moreover, in which no proof can be found of the existence of the disease in a progenitor, we can trace it in collaterals; and it seems to me reasonable to conclude that in such instances, though the common parent may not have lived long enough to develop the disease, it was present potentially. Nor is it contrary to reason to conclude that the constitutional disposition, whatever that may be, is often present without the disease becoming developed. This must be the case where a disease or pecu-

liarity has skipped one or more generations. The peculiarity of the grandfather may reappear in the grandson, though the father may not show it; yet the father must have something in him which he can transmit, though it never be seen in himself.

I may pass now to the consideration of the view which I would maintain, that though local in its origin, there is in some, possibly in all, cases a predisposition to the disease, which may, possibly, be distributed through the system, but which more probably has its seat in some among the tissues of the body. I would question therefore the evidence of there being any special disease in the blood, which either alone produces cancer, or co-operates with tissue specially fitted for the development of the disease.

Let me mention here that I doubt the existence of cases of simultaneous outbreak of primary cancer. Now and then, but rarely, more than one primary cancer may form, but at different periods of time.

Before giving my reasons for attributing a local origin to cancer, it may be well to state the difficulties which lie in the way of my reception of the blood hypothesis. These are:—1. That all the facts in the history of a cancer can be explained without resorting to it. 2. That there are some facts which militate against it. 3. That, if we receive it, we must admit either that the same blood-poison aids in the formation of simple tumours or that each tumour has its own special poison.

I will take first the facts which appear to me to militate against the blood hypothesis. And I now speak of the blood as a whole; I shall presently refer to the possible influence of the white blood-corpuscles.

Now, supposing that the blood were a poison-holding fluid, we should expect, inasmuch as the poison must be present before the tumour which it aids in producing appear, that there would be some previous indication of such diseased blood state. But if there be one thing more noticeable than another in the early history of the majority of cases of cancer, it is the wonderful health enjoyed by its victims. Is it not the common story—"I did not think there could be anything in the lump, because I was feeling so particularly well"? Generally, our patients have the build which would point to long life, and come of long-lived families. This is by no means an invariable rule. Many cancer patients are, and always have been, delicate, and come of consumptive families; but they do not become more delicate—indeed, they often improve in health before the cancer is discovered. We should expect an opposite condition were the blood the seat of disease.

Again: a growing cancer is removed, and the disease may never return, the patient remaining in perfectly good health. What are we to assume here, if we adopt the doctrine of blood disease? Is it that, though the cancer was growing, the removal took place at the moment when the blood-poison had all been eliminated?—or that the poison remained in the blood, but that the only tissue in a fit state to co-operate with it in the formation of cancer had been removed, and hence no fresh cancer matter appeared? Either solution is difficult of acceptance. It is difficult to understand that though the blood must at first be in a diseased state, yet that a cancer, when it has formed, may grow and spread, though the blood have returned to its natural healthy condition. On the other hand, it is difficult to understand that a patient may remain free from local disease altogether, though the essence of the disease remain in the blood. The cases are rare in which cancer has been removed once and for ever by operation; but those in which it has remained undeveloped for years after operation are by no means uncommon, and the same remarks apply equally to them.

There is nothing which seems to contraindicate the presence of a blood-poison in cancer more than the well-known fact, that the disease, after operation, rarely returns in any of the ordinary seats of election. Scirrhus of the breast, for example, while it returns constantly in the skin, in the connective tissue, in the lymphatic glands, and in muscle, seldom returns in the opposite breast. This is as true of cases in which there has been a long immunity after operation as of those in which the disease returns rapidly. Were the disease seated in the blood, should we not probably find recurrence in those organs which we recognise as the ordinary seats of primary cancer? The same remark applies to medullary cancer of the testicle, to epithelioma of the lip or tongue, and to disease of symmetrical parts generally. Surely, as more than half of all external cancers are seated in the breast, we should expect to find the second breast more frequently the seat of disease if the blood-condition were a determining cause.

Another objection is, that while cancer is growing and infecting the neighbouring tissues, or even causing the cancerous cachexia, injuries inflicted on other parts of the body may, indeed usually do, run their ordinary course; wounds will heal and repair go on just as though the blood were in the purest condition. It may be said that the cancer-poison is being eliminated by the tumour, but new growths will spring up elsewhere, while healthy action is going on in the wound.

While, then, some of those characters which are usually present in blood diseases are wanting in cancer, we do not meet in the latter with any which specially distinguish blood disease. I propose further on to endeavour to show, that whatever there may be in common between cancer and blood diseases will be found between these and most forms of tumour.

The reasons which make us hesitate to receive the hypothesis of the blood as a circulating fluid being the seat of a poison may be brought against the view that the poison resides in the solid elements, the white corpuscles, or that they have any special influence in determining the growth of cancer.

Whether the white corpuscles form or take part in the formation of the cell-structure of cancer is a point on which I shall not enter. We know that they pass out freely into the tissues, and that they probably perform some important part in nutrition. But it is difficult to conceive that each white blood-cell has a special property which fits it for some special work: that one belongs to muscle, another to brain, another to cancer-tumour. Yet, on the supposition that the white cells possess peculiar properties in reference to cancer, we must either admit this, or we must conclude that every cell is a conveyer of cancer influence—a view more difficult of acceptance than that under which the poison is supposed to be distributed through the fluid blood.

Surely the simpler view is, that each tissue, each active element of that tissue, has its own vital property; and that the blood, a common fluid, is distributed to all alike, each taking and appropriating what it wants. Of course it will be evident that impairment of the nutrient fluid will cause an unhealthy state of the tissue to be nourished; but is it not also the case that if the tissue be impaired the purest blood will fail to induce healthy nutrition? What else is the meaning of the degeneration of muscle from disuse? The pure blood is brought to it, but it will not thrive. The same is seen in the vegetable kingdom. The branch of a healthy plant trained in the dark will be sickly, and aphides and parasitic growths will abound in it. The sap, which rises freely and healthily to other parts of the plant, is not taken up and utilised by the sickly branch. I cannot help here referring to those strange phenomena observed by Dr. Brown-Séquard in guinea-pigs with partially-divided spinal cords. As is well known, they become epileptic, the fits occurring, however, only when a small area of skin near the angle of the jaw is pinched. But the point to which I would draw attention is this, that the area of special sensibility is also the area of some obscure change which seems to render the part acceptable to lice, for on this space, somewhat larger than a shilling, they cluster in remarkable abundance. There is no perceptible change in the skin or the hair; the temperature is not materially altered; the blood brought to the part is the common blood; there may, perhaps, be a change in secretion. Let us pass to a simple tumour—a fatty tumour or a wart. Here, in the one case, we have a common blood circulating through all the fat in the body; but in one part there forms a separate overgrowth, due, surely, to some nutritive or formative change in the part. So, in warts, the increased development of the cells of the rete mucosum must be due to the part, not to the blood. If the part is capable of initiating those changes which lead to tumour formation, why assume that in tumours which show more characters of tissue change there must be some additional agency in operation outside the tissue?

And this leads me to the question, Is there any essential difference between cancer and other malignant growths, or between these and any tumour whatever? I mean,

of course, genetically; for structurally there will be differences in abundance, and in behaviour perhaps still more. But the acarus folliculorum and the trichina spiralis differ from one another more widely, though both are simple parasites. We may take a lipoma. We find that in the midst of the ordinary fat of the body a separate mass is developed, which continues to grow indefinitely, which may at last thin the skin and cause its ulceration. We find that the tendency to this form of tumour is sometimes hereditary; that sometimes there are two or many more; that sometimes they are recurrent. The tissue is of pure fat, and we cannot generally detect any difference between it and the ordinary fat in which it is imbedded. But there must from the first have been some property in the tissue from which the fat was developed different from and in excess of what existed in the normal fat layer. Here the history of the fat tumour ends; nothing more comes of it. We recognise the fact that the more the structure of a tumour resembles a natural structure the less is its power of doing harm. This is especially the case with fat-cells, which, when once formed, cease to perform any active function. But it may be said there is an essential difference between a cancer and a lipoma in regard to similarity to natural tissue. Histologically there is, but as to mode of genesis there need be none. Admit that the elements of any tissue may take on independent action, and no line can be drawn between the mode of origin of the simplest and the most malignant of tumours. We may take another tumour, enchondroma. Here, springing up usually, though not always, in a part of which cartilage forms, or has formed, one of the natural constituents, we find a tumour which may grow indefinitely, and which often remains, like a lipoma, fixed to its original seat of growth. The texture may be at first indistinguishable from pure cartilage. So far there is no material difference between the modes of growth in a lipoma and an enchondroma. But a cartilage tumour, having once formed, may go on to further changes. There may be from the first an indication of some difference from normal cartilage. Instead of remaining stationary as cartilage, it may go on to form bone, or may break down into cavities containing nuclear and fibrillated and jelly-like substance; and then we may have dissemination to any extent. The original tumour may have become converted into a cystic growth, more sarcomatous than enchondromatous in its character; but the secondary growths will often revert to cartilage structure, while sometimes they will appear as sarcoma. It is not difficult to understand why an enchondroma differs from a lipoma. The fat-cells of a lipoma have reached their full term of activity. Cartilage-cells are multiplying and active. In the disseminating tumours there is no cyst; their elements can become free and may get into the lymphatics or bloodvessels, and be transported to distant parts and grow there. We may have all varieties of activity of growth, from the nodule of cartilage which goes on to form a simple exostosis to a structure in which the cells seem to be set free from all restraint as to number or form or change of character. In these latter cases we get into the region of malignancy; but who can draw a line separating a class which resemble lipomata in simplicity from those which are allied to cancer? We have no proof of the power of natural cartilage-cells to increase and multiply when detached from their natural position; but we have it in the case of the allied structure—bone. Here experiment has shown that the periosteal cells, if scraped from the inner surface of the membrane and imbedded in muscle or connective tissue, will form bone nodules. The experimentation is rough as compared with that which is worked out in the body in the case of disseminated cartilage or osteal growths. Once admit that the cartilage-cell-holding tissue can throw off the laws which regulate natural growth, and I do not see where or why it becomes necessary to invoke any other aid.

It is certainly impossible to say *why* one enchondroma should remain as pure cartilage and another go on to softening and dissemination. It is, we know, the tendency of tumours to deviate from those fixed laws of growth which regulate the size and form of our natural structures. Even tumours most resembling natural organs show this. An adenoma of the breast, for example, may vary in character from a compact gland-like structure indistinguishable from that of a natural mammary gland to a soft flickering substance containing proliferating cysts and merging into a cystic sarcoma. Surely in such cases one can only recognise a disposition, more or less pronounced, to perverse development in an atom of natural tissue. No one would, I presume, consider a special quality of blood necessary to account for them. But the fat-tissue, or the cartilage, or the gland-like substance will grow alike indefinitely and irregularly, and their ultimate texture may present as many deviations from that of natural tissues as does their gross mass. And so with regard to sarcoma or fibroma in all their varieties: they do not differ more from forms seen at one time or another in natural development than do enchondroma or adenoma in their advanced stages. Many of these prove to be fearfully malignant; their elements will be carried away and form new centres of growth, and destroy their possessors as surely as will scirrhus. But what line can be drawn between perverse local development and this development *plus* blood poison?

Can it be said that there is something in cancer which is not contained in those other forms of infecting disease which I have mentioned? Surely not; for though scirrhus may, as a rule, contaminate the system more certainly and thoroughly, yet as much cannot be said for epithelioma, and it does not apply at all to rodent cancer, which, according to all recent authorities, must be regarded as a modification of epithelioma. As we shall see, the mere structural peculiarities will explain the differences in the degree of malignancy found in the various forms of cancerous and other tumours. In most cases the first notice we have is the appearance of a tumour, and in those of internal cancerous or other allied tumours the new growths may have attained a large size, and have spread and infected many other parts before any sign is shown of their existence. This is widely different from what we see in blood diseases generally, in which some symptoms, inflammatory or other, precede or immediately follow the outbreak of local disorder. But what symptoms of cancer in its early stages can we find beyond those afforded by the mere existence of the tumour itself? Is it not rather the case that our suspicions are aroused by the very insidiousness of the local disease? There are some things indeed which do make us suspicious of a cancerous future; but they are purely local conditions, and may exist for years before any real malignant disease shows itself. When, for example, with cancerous antecedents we find an undeveloped testicle, or a breast which is unable to perform its functions, or when the skin is the seat of brown scales or moles, which as we advance in life become larger or perhaps irritable, or when the tongue is ichthyotic. So, too, we shall see without surprise a cancer grow when the lip has been long irritated by the pipe, or the tongue by a jagged tooth, or the scrotum by soot. In regard to this latter source of irritation a curious question arises. Chimney-sweeps' cancer used to be a very frequent disease. The disuse of climbing and the cleanlier habits of the sweeps have greatly diminished the number of such cases. If, then, epithelioma be a blood disease at all, the probability is, the number of cancerous persons remaining the same, that if the local seat be not found so often in the scrotum, it must be established elsewhere. Consequently we ought to find an increase in the frequency of cancer in other situations.

We may now come to the question, Why should malignant growths, some cancers especially, when once formed, infect neighbouring and distant parts, and ultimately contaminate the system? The knowledge we have of late years acquired of the independent actions of cells renders a solution more easy, though I admit that it is not free from difficulties. It has long been known that cells are dispersed around a cancer tumour, the direction and rapidity of the dispersion varying according to the density of the tissue, and the abundance of connective tissue spaces, or of lymphatic or vascular networks in which it lies. It is now known that the white blood-corpuscles can wander from their vessels; more recently it has been seen that cancer-cells—like the white corpuscles—show amœboid movements, and can thus travel independently in tissue spaces, or even permeate delicate membrane. There is no doubt, I suppose, that these cells, whether the matter that forms their nuclei or the free granules, are the active agents in the reproduction of cancer. We can understand that these cancer-germs may thus travel through their own power, or be carried along in the vascular systems or connective spaces in every possible direction. And it must be remembered that cancer is for the most part a structure in-

filtrating itself among the tissues in which it lies—not surrounded by a capsule or limitary membrane of any sort, as are so many non-infecting tumours. The newly-developing and active cells are always in direct contact with the healthy tissues on which, in fact, they are living. Once set free, the cells may travel in the three channels I have indicated. First, and chiefly, they may travel along the lymphatics to the glands where they will form new centres of growth, and by continual invasion affect a series of them and perhaps contaminate the lymph itself. Or, secondly, they may travel through the surrounding tissues, their direction being often determined by the density of the tissue. Thus it is often noticed that after breast operations the disease will reappear above or below the cicatrix, and will travel on the same plane, not passing across the dense cicatricial tissue. The disease will seem to prefer the easier course, but the densest tissues will not prevent this permeation. In malignant intraocular growths the germs are found at times extending through the dense sclerotic and then bursting out into new growth in the free perioocular structures. Thirdly, they may pass into the blood-vessels, and thus into the general current of the circulation; hence, we may get infection of internal organs, or of parts widely removed from the original tumour. We have evidence of this mode of conveyance in many recorded cases of sarcoma and enchondroma, and the secondary cancer growths in the lung and liver, so like in many respects to the deposits we get in pyæmia, point to the same mode of origin. Besides these principal modes of conveyance, we meet at times with evidence of conveyance in free cavities by gravitation, and sometimes, but rarely, of implantation by auto-inoculation.

There are some tumours of which the elements are disseminated far more rapidly than are those of cancer; on the other hand, some cancers show little tendency to dissemination. A small melanotic sarcoma, for example, will often give rise to numberless secondary growths in a marvellously short space of time. This is perhaps due to the great activity of growth and the abundance of granular matter which often characterise this form of tumour. If we look to epithelioma, on the other hand, we see that, great and destructive as may be its local action, yet its area is usually limited to the first part invaded and the contiguous lymphatic glands. The structure explains this. The component cells are coarser, have less independent movement, are more packed together, sometimes becoming coherent. They may pass into the lymphatics—coarser matter will do that,—but, like the cells from which they originate, they are little disposed to wander; the tumour grows more by continuity, less by dispersion. This is still more marked in rodent cancer, where the cell activity is at a minimum and the ulcerative keeps pace with the formative processes.

It seems to me, then, that we can account for the diffusion of cancer, when once formed, without calling to our aid a pre-existing or concurrent disease of the blood.

Admitting that cancer, like other infecting tumours, is reproduced by the growth of germs which have been conveyed from it to distant parts, the question arises, how can we account for the fact that after removal there may be no reproduction for years? Can it be imagined that during all this interval the germs of disease deposited from the original tumour have remained inactive? Is not this contrary to the nature of cancer, and does it not show that there is a cancerous poison in the system? I admit the difficulty; but it is not removed by assuming that the blood or the system is primarily diseased. My conviction is that cancer and other tumours may remain in a rudimentary state for an indefinite length of time. In the case of recurrent cancer we often see that an enlarged and hard gland which is left after the removal of the main tumour will remain quiescent for years, and that then active growth will set in. The same will take place in a cicatrix which has, perhaps, remained hard. It may be said that this is only an evidence of the return of the blood to a cancerous state. But it is as difficult to understand the quiescence of the blood during this long time as of the cancer germs. Many facts both in normal and morbid development are indicative of the possibility of tissue remaining unchanged for long periods, and then taking on new phases of growth. Such are, for example, the change of epiphysial cartilage to bone after twenty years, the change in the female breast at the period of puberty, the shedding of the milk-teeth and the development of the second set. Still more to the point are, perhaps, such instances as the frequent enlargement of the prostate gland in advanced age, or the growth of hair on the female face from follicles which had existed, but in an inactive state, for sixty years. It is not at all improbable that what is here seen as a result of advancing degeneration often plays its part in cancer development. It is probable, too, though it may not admit of proof, that in those cases which are so common of hereditary lipoma or sebaceous or dermal cyst the rudiments are present from the first. We know as a fact that such tumours will remain small, only just perceptible perhaps for twenty or thirty years, and will then take on active growth. In the imperfect structure of an inefficient mammary gland, or of an abortive testicle, is there not present from the earliest period some form of indifferent tissue prone to irregular development, but quiescent during the active periods of life? This is rendered the more probable from what is so frequently found in connexion with epithelioma. We have here on the surface what may be hidden in the case of the deeper glands. Scales, or warts, or moles, and some imperfect epithelial growths, may remain without change for fifty years, and then may become the seats of a cancerous growth. If such a scale or other imperfect tissue were persistently irritated, it would doubtless become cancerous at an earlier period. Cancer has been there potentially for years, but its time has not come. Such, I believe, is the explanation of the fact that cancer germs which have wandered from the parent tumour may remain quiet for indefinite lengths of time. I can see no other way of accounting for such a case as this. A tumour is removed; a year afterwards a small nodule, not so large as a split pea, is discovered and removed, no other nodule being perceptible after careful search. After another long interval, another small nodule is found and removed, and again there is quiescence. This may be again repeated. Can we suppose that there are continual reproductions of a blood-poison followed by periods of healthy condition?

While I believe it probable that the germs of cancer may thus remain in a sort of dormant condition for long periods of time, I would by no means imply that there is not in cancerous patients a special disposition to tissue change located in some, but not in all the structures of the body. The general tendency to degeneration may give rise to the primary local change; so may local irritation. Thus, out of a hundred chimney-sweeps or clay-pipe smokers, a certain number may have chimney-sweep cancer or lip cancer, the number varying perhaps according to the duration and extent of the irritation. But the majority will not become cancerous, irritate how you will; and of the remainder, few probably would have cancer unless irritation were applied. The same remark may be made as to such ordinary growths as warts. In some the least irritation will produce them; in others they never will appear. Like other tumours, too, they have their seats of election, and their favourable period of life, and they often appear to be inherited.

There are other facts observable in the later course of a cancerous disease which are difficult of explanation either on the hypothesis of blood disease or of localisation. For example, a local cancer in an ordinary situation may give rise to a general disease of a structure totally different from it. We meet, for example, with a widespread disease of the osseous system following a breast cancer, and the disease may not show itself as cancer deposit, but as entire absorption. This may be seen in many of the bodies of the vertebræ, which may totally or partially disappear without any cancer growth being detected, and while yet cancer deposit is taking place in other bones. These, no doubt, are exceptional cases. We find, however, that natural tissues are at times disposed to undergo changes which are equally inexplicable. The changes taking place in some out of all the muscles of the body, the fibrous growths on a number of the nerve-cords in multiple neuroma, and other cases, show that local tendencies to tissue-change exist in detached parts of general tissues. They may be allied to the degenerative changes which pervade unequally particular tracts of the arterial system. We cannot as yet account for these and such-like facts; but whatever may be the local condition which thus determines special tissue-change, whether its seat be in the parenchyma or in the nervous system, the same may possibly determine a preference for deposit or degeneration under the conditions of progressive cancer.

We have, in fact, to solve the question, Why have diseases seats of election at all?

Another remarkable and not very explicable phenomenon is the arrest of cancer growth and the gradual wasting of the diseased mass. This is an occasional event which is very important, as it encourages us to hope that a cure may yet be found for the disease. Although this recession of cancer is sometimes coincident with the development of tubercle, I doubt whether we have sufficient data on which to establish the conclusion that the one disease is antagonistic to the other. It is, however, worthy of note that, frequent as is the occurrence of cancer in consumptive families, the coexistence of the two diseases in one member is not a common event. But cancer is a disease of the middle and later periods of life, and tubercle generally of an earlier one. Those who live to be victims of cancer have passed the period when tubercle would be most likely to set in. That this arrest or recession is not due to any exhaustion of the cancerous element in the body is shown by the fact that, while the disease is retrogressive in one part, it is in active growth in another. The retrogression differs from the degeneration of the earlier formed cells, which is constantly going on in the interior of tumours, as shown by the presence of fat-granules, compound granular cells, and such-like. In the case alluded to, the activity of the whole mass is arrested, new cells cease to be formed, and the tumour fades. I doubt whether this can be from the plugging of the vessels feeding the tumour. This no doubt often takes place, and the death of some portion of the mass may be the result. But when we find a widely-spread mass becoming quiescent and then fading throughout its whole extent, we must, I think, look to some other cause. For cancer is so far like a parasite that it draws its nourishment largely from the tissues in which it lies. When, for example, a nodule of enchondroma or of sarcoma is detached and floated off in the current of the circulation, and afterwards grows in the lung or the liver, it must in the first instance obtain its nourishment from surrounding tissues. We must look elsewhere for an explanation. It only shifts the difficulty back a stage or two, as I have so often done before, to suggest that the recession of cancer takes place in obedience to the law under which local atrophy, independent of inflammation or disuse, may occur; or that it may be due to some want of organising power inherent in it from the first, as some cancers seem born to be atrophic. It is, under any circumstances, a most important subject for investigation.

Lastly, I would suggest the question—Why is it that cancer, if a blood disease, should be so pre-eminently a disease of women? Taking all cases together, I suppose we should not be far wrong in saying that the uterus and the mammary gland are the seats of the disease in ninety per cent. Does it not look as if the mere tissue changes dependent on the peculiar vital conditions of these organs were the starting-points of the disease? Were it not so, and if the disease were from the first in the blood, surely we should find that men were as prone to cancer as women. Other forms of tumour are nearly as prevalent in the one sex as the other. It is a point worthy of consideration.

I must now apologise to the Society for having so long occupied its time in a mere enunciation of opinions, of which many must be considered as now commonplace. Some may be regarded as vague and shadowy. Long as my remarks have been, I have felt that, without overstepping the bounds of your forbearance, I could not do justice to any one of the subjects on which I have entered. I have, however, the satisfaction of feeling that, without reference to my shortcomings, they will afford ample material for discussion by those who differ from or who agree with me, and who will, by giving us the aid of their experience, their observation, and their reflection, throw a light upon the nature of this fearful enemy, and thus upon the means by which we may accomplish its overthrow.

INCONTINENCE OF URINE.—Dr. Thomas Kennard, of New York, uses the following ointment in the treatment of this disease:—Sulphate of atropia, ten grains; veratria, ten grains; hog's-lard, twelve drachms. By rubbing the perineum three times daily with the ointment, in three cases of paralysis accompanied by incontinence of urine, Dr. Kennard obtained a complete recovery at the end of a few days.

ABSTRACT

OF THE

Gulstonian Lectures

ON THE

ORIGIN AND RELATIONS OF NEW GROWTHS.

Delivered at the Royal College of Physicians, [illegible]

BY JOSEPH F. PAYNE, B.A., M.B., F.R.C.P.,

ASSISTANT-PHYSICIAN TO ST. THOMAS'S HOSPITAL.

LECTURE I.

IN entering upon this wide subject I do not propose to discuss all, or even many, of the important questions therein involved; but rather to exhibit the relations of such growths in their structure to the normal parts and tissues of the body, and their development to the general laws of anatomy and physiology. The term "tumour" had once a very wide range of meaning, and in modern times it has been used with considerable laxity. Even in Virchow's great treatise on Tumours the term is made to include all kinds of cysts, even hydrocele, as well as the products of tubercular and syphilitic disease. My lectures will be confined to those tumours which may fairly be described as new growths, omitting mere enlargements of parts already existing, the products of inflammation, and syphilitic and tubercular products. This group of what Virchow calls true growths includes all new forms in the shape of a more or less circumscribed mass of substance resembling the tissues of the body in a mature or an immature state, also cancers and sarcomatous tumours, and combinations of all these forms.

The chief fact which all these growths have in common is the fact of growth or increase, which appears to be in a certain sense independent of that of the body, as if the tumour had some separate life of its own. So strongly did this impress the older observers that for a long time tumours were regarded as something parasitic or foreign to the organism. Harvey has expressed this conception with great distinctness. The idea of a separate life, however, is now untenable, and no one can doubt that a tumour is essentially a part of the body. But there are certain respects, dynamical and morphological, in which tumours do separate themselves from the general unity of forces in the organism, exhibiting a preponderance of vegetative, and an almost entire absence of the animal life. Not exercising any special animal functions, their life is merely nutritive; they accumulate rather than expend energy, and this in part may be the cause of their unrestrained increase in size. Comparing or contrasting physiological and pathological productions of simple tissue, in the former case the newly-formed structure has what we call a function, in the latter none. Function is not always associated with liberation of force; there are simply passive functions; but in the case of muscular tissue, and in some parts of the nervous system, liberation of energy is inseparable from the functional activity of the organ; hence it is only from the latter class of tissue that an illustration can be drawn. Compare the physiological production of muscular tissue in the uterus during pregnancy with the pathological growth of tissue in the form of tumour. In the early stages the process is the same in both cases; there is a production of muscular fibre-cell, and the histological development of this appears to be identical. The production of new tissue in the simple physiological hypertrophy of the gravid uterus is as abundant and rapid as in many tumours, but it reaches only a certain limit, and conforms to a certain type, while the tumour has no limit, and shows no conformity to rule. This difference is not to be explained by the amount of nutriment supplied; the chief point of contrast seems to be that while the uterus, however large, is still capable of exercising normal functions, accompanied by a liberation of force, the muscular tissue contained in a tumour, though capable of a

liberation of energy by contraction, does not in fact exercise any force.

Of the formation of growths I have been able to arrive at no better definition than this—the addition to an organism, which is in its general outlines already completed, of new parts without any definite function. To explain such a process we must have recourse to comparison. There are three processes which may be commonly met with in living bodies with which the production of tumours may be advantageously compared: the formation of parts in the incomplete embryonic organism; the reproduction of parts worn out or lost in the complete organism; and the enlargement of parts already existing. There is a gradual transition of each of these in many cases to the tumour formation. With regard to embryonic growth, it has three features, which may be called general laws—viz., progressive development and limitation of size and form; and these are true not only of the whole organism, but of its parts. These results are produced by the growth and multiplication of cells. The primordial cell divides and divides again until it has been converted into a mass of similar cells, and these are transformed into tissues. There are two stages: multiplication without differentiation, and differentiation with development. The causes of differentiation are obscure; but we know that the embryonic cells arrange themselves into certain layers from which the subsequent development of organs and tissues takes place. The whole process of development, whether of organisms or parts, may be summed up as being tissue development or histogenesis by means of cell-liberation, controlled by certain obscure laws of size and form. In comparing this with tumour development there is a close analogy up to a certain point. In both cases cell proliferation and multiplication are the starting-point of growth. Whether a tumour starts from a single cell or germinal centre we do not know. When we are able to examine the process, we find germination taking place from several points, but they may have originated at one. The analogy between these processes is the basis of the cellular tissue of Virchow, who lays down the general principle that all new growths pass through a stage comparable to the undifferentiated cellular condition of the embryo. This he calls the stage of indifferent cell-proliferation, in which all elements are alike, whatever form they may be ultimately destined to assume. And this indifferent cell-proliferation is an undoubted fact: we may see it at the margin of almost every growing tumour. Nor need we hesitate to allow that, as the earlier stages of all animals have a considerable resemblance in structure, so have the earlier stages of all tissues. The rete mucosum of the skin has a structure as indifferent as that of granulations. The difficulty is to allow as great a faculty of differentiation to this granulation material as to the true embryonic tissue. Virchow states that in certain tumours a part of the original elements becomes converted into connective tissue, another part into epithelium, till a complex structure is produced like that of an organ of the body—i. e., a sort of pathological organ or organoid tumour. He also describes a class of teratoid or monstrous tumours, which represent not an organ only, but the whole system of the body. Such a development, he says, is not more difficult to conceive of than that of simple tissue tumours. It is, however, very doubtful whether the class of organoid or of teratoid tumours can be shown to originate in a stage of indifferent granulation-cells. It is doubtful whether organoid tumours are anything else than a development or enlargement of some previously existing parts, unless, as sometimes appears, they are composed of two kinds of tissue—for instance, of vessels and an epithelial covering, which are evidently of different origin. The rare class of teratoid tumours appear to be, generally speaking, instances of inclusion of a part of the integument at an early period of development, or they are comparable to an imperfectly formed fœtus; at all events they are apparently in all cases congenital, with the possible exception of some growths in the ovaries. Such a mass must be regarded as part of the products of the original congregation by which the organism was produced, and not of a secondary process of growth set up after its completion. There are other tumours which may be supposed to bear the same interpretation—namely, mixed tumours, such as those composed partly of cartilage and partly of fibrous tissue, which do, undoubtedly, pass through a stage of indifferent cell-formation, since this indifferent tissue is found to pass by insensible gradations into each of these forms. But in these tumours all the tissues belong to one class—the connective-tissue series—which are physiologically interchangeable. In another class—namely, cancers, we find, it is true, two types of elements: the stroma, which is a connective-tissue structure; and the cells, which often have more or less of an epithelial character. If both parts arise from an indifferent cell-formation, this is of course comparable to the differentiation of embryonic development; but this is a question of extreme difficulty. At present we may take it provisionally as not being proved that indifferent cell-formation does give rise to both classes of elements in these tumours. From all these we must conclude that the process of tumour formation is analogous to that of embryonic development, so far as both processes result in the formation of a mass of indifferent or similar cells; but beyond this the parallel is less exact.

I now pass to the comparison of tumour-growth with the processes of repair or reproduction of lost parts, and as connected with the process of inflammation. The capacity for reproducing lost parts differs greatly in the animal kingdom. The capability of repair is inversely as the amount of metamorphosis which the animal has gone through. In the mammalia the power is extremely limited. An organ once lost is lost for ever. With regard to the minute processes of repair, they differ from the corresponding processes in new growths very greatly in the degree to which the vessels and the blood participate therein. In order to compare the one with the other, we must leave out of account the vascular changes, and we then find that the residue, or the changes in the fixed tissues which take place in repair, have a close analogy to new growth, being really, in the early stages, processes of germination and proliferation. These are also the tissue-changes which take place in the early stages of inflammation with which repair is so intimately connected. The extent of these germinative changes is a matter of much controversy; but, from direct observation in the omentum, it is clear that such a germination and proliferation of tissue is a consequence of inflammation. In the changes that take place in inflammation of the omentum, we find evidences of tissue-germination of the same kind as are found in the early stages of at least three different new growths—cancer, tubercle, and sarcoma—when affecting the same part. Passing to the more definite structure produced by the process of repair, we shall still see a considerable analogy. The repair of many tissues, at all events of fibrous tissue, passes through a stage very fairly comparable to the indifferent cell-proliferation of new growth. The granulations are essentially composed of vessels infiltrated with an enormous number of lymphoid corpuscles which are quite indistinguishable from the corpuscles represented as taking part in the indifferent cell-formation of tumours.

Referring to hypertrophy, the formation of new growths has doubtless many points of contact with the process by which existing parts of the body are increased in size. The parts which are specially disposed to hypertrophy are, with certain exceptions, also very liable to become the seat of tumour formation; as, for instance, adipose tissue. The largest tumour on record is a fatty one, of which a drawing is preserved in the museum of the Harvard University, Boston, and which, at the time of the death of the individual, is said to have weighed 275 lb., while the patient without it was estimated at less than 100 lb. It grew chiefly from the hip, and was of such enormous size that the patient was condemned during the latter part of her life to absolute inaction. This tumour illustrates several of the laws of new growth which I have endeavoured to trace. It arose in a tissue specially disposed to hypertrophy; it arose in a part of the body where hypertrophy of this tissue is particularly liable to occur; and, from its causing absolute rest, even the ordinary waste of fatty tissue which occurs from the movements of the body was reduced to a minimum. Not only are special organs, but even special parts of organs which are liable to hypertrophy, are also liable to become the seat of new growth. Remarkable instances have been given of multiple tumours on bone, springing from those parts of the skeleton which are also prone to enlargement in constitutional diseases, such as rickets. Enlargement of the lymphatic glands is well known to be an exceedingly common affection of the body. The structure of glands thus enlarged is not generally different from

that of a normal gland. In a similar class of cases we have glands which in outward appearance are simply enlarged, but which, nevertheless, differ both in minute structure and in their history. Either the newly formed gland decays, in which case we call the tumour scrofulous, or it becomes hard, loses somewhat of its cellular elements, and shows an increase of the fibrous element. Then there are cases in which, by inflammation and thickening of the capsules and connective tissues, a group of glands become adherent, and a lobular mass is formed which may be regarded as a tumour. Our powers of observation do not permit us to draw any fixed line between the two cases. There is a third class of cases, in which the enlarged glands are in direct connexion with masses of newly-formed tissue around them, which penetrate or infiltrate the neighbouring parts, and convert them into similar structure. This we call an infective or a malignant tumour. Yet there are such cases in which the structure of these adventitious masses differs little, if at all, from that of a normal gland. These instances may suffice to show that hypertrophy passes, by insensible degrees, into a condition resembling the most pronounced forms of new growth, both in their distinctness and in their generalisation, and even in their infectiveness. Whatever the mechanism may be by which hypertrophy is produced, cell proliferation and multiplication takes a very important share in it. It is therefore desirable to inquire what are the minuter changes by which this increase in parts is effected, and whether these minuter changes, as well as the larger features of hypertrophy, are also comparable either to those which are concerned in embryonic development, or to those which are concerned in the production of tumours. Enlargement of organs appears to be partly effected by increase in the size of the elementary parts, and partly by the multiplication of those parts. The latter process, which has been called hypercrasia, is no doubt the more important. It is not always easy to get precise observations of these changes in an early stage; but in hypercrasia of connective tissue it is evident that the first step is the multiplication of nuclei. This is the process I have referred to as indifferent cell-formation. The human omentum in advanced life becomes thicker, shorter, and oftener adherent to neighbouring parts, while adhesions are found between the parts of the membrane itself. These changes are twofold. The amount of homogeneous intercellular substance contained in the membrane becomes diminished; and, on the other hand, the fibrous element increases, and fibrous growths are formed which effect the adhesions and contractions of distant parts. Changes of this kind are seen in all normal tissues. It is quite clear, from the changes shown in the diagram of a small sarcomatous tumour, that it is formed of nothing else but a multiplication of small cells, which is comparable in its main features to the multiplication of the small cells constantly going on in the organ. We may conclude that a hyperplastic process, or one involving cell-proliferation, is the chief factor in hypertrophy as it is in embryonic development in repair, in inflammation, and in the new growth of tumours. The element common to all these processes is one which is also normal in certain parts of the body, and connected with the process by which certain fundamental changes are effected.

SECRETION OF BILE.—Professor Stricker and M. Rœhrig have recently instituted a new series of experiments with the object of determining the secretion of bile under various circumstances. A canula was introduced into the ductus choledochus, and connected with a cucurbit by means of an india-rubber tube. The experimenters stated that every cause which produced hyperæmia of the hepatic vessels increased the secretion, whilst anæmia caused a diminution. During fasting, ligature of the portal and hepatic veins stopped the secretion; ligature of the hepatic vein alone, as of the aorta in the situation of the diaphragm, caused only a diminution of bile. Ligature of the ascending vena cava stopped it immediately. All the conditions which favour the contraction of the vessels also diminished the secretion. On the other hand, the secretion increased after meals; it became more abundant with the introduction of water into the stomach and intestines, of cathartics like croton oil, colocynth, jalap, calomel, Epsom salts, and also with ligature of the aorta below the origin of the cœliac artery.

ABSTRACT
OF A
Clinical Lecture
ON A CASE OF
THE EMPLOYMENT OF THE CAOUTCHOUC ELASTIC LIGATURE.

Delivered at St. Vincent's Hospital, Dublin,

BY FRANCIS J. B. QUINLAN, M.D.,
PHYSICIAN TO THE HOSPITAL.

AFTER some introductory remarks upon the different modes of removing vascular growths by the galvano-cautery, the écraseur, and by ordinary ligature, Dr. Quinlan said:—

The case under our consideration, and lately under your observation, is that of Bridget G——, a healthy, well-nourished countrywoman, of plethoric temperament, aged twenty-seven years. Upon examining her, we found, at the upper part of the vulval opening, a large vascular tumour, of the size of a very large orange. This tumour was of several years' standing, and bore quite an exact resemblance to a small cauliflower. It was connected with the site of the clitoris by a pedicle resembling the stalk of that vegetable, which was topped with the arborescence of the tumour. From either side of the pedicle descended two hypertrophied labia minora, like enormous cockscombs. The case was evidently one of syphilitic hypertrophy—a diagnosis which was thoroughly confirmed by crops of condylomata around the anus and on the folds of the nates. The cauliflower tumour, which was divided into two portions by a fissure extending to the very root of the pedicle, was evidently the hypertrophied prepuce and frenum of the clitoris, and the peculiar arborescent appearance was attributable to the trabeculæ of the erectile tissue in this part of the labia restraining the hypertrophy of the rest of the tissue, and, by binding it down in bundles, producing the arborescence. The condylomata and the local irritation being reduced by rest and appropriate treatment, the question arose as to the best and safest method of removing this disfiguring hypertrophied mass; and it struck me that the newly introduced elastic ligature would admirably act in the case of this most vascular growth, so liable to cause dangerous hæmorrhage. Accordingly, on the 20th of December I ligatured the whole mass with a solid india-rubber cord two millimetres in thickness. I used this solid cord because the result of some previous experiments had satisfied me of the inadequacy of drainage-tube or any other variety of hollow caoutchouc tubing. The solid cord which I used is to be obtained at most india-rubber shops, the only difficulty being to procure it of sufficient thinness; when thicker than I have mentioned, it is unmanageable, especially for small growths. When drawn out to four times its rest length, this cord is not more than half a millimetre in thickness, and the tension upon half a metre of it is 1230 grammes. It is thus admirably adapted for this gradual ligaturing and cutting process.

Having etherised the patient, I tightly ligatured the whole mass, tying the knot by the ingenious plan, devised by Sir Henry Thompson, of the addition of a series of ordinary ligature knots of sewing silk to prevent the india-rubber knot slipping. Immediately the temperature of the tumour fell from 98·3° F. to 96·5°. After a few hours it rose again slightly, and the tumour became very tense. The temperature then fell again rapidly, and the sphacelating process steadily continued until the growth became destroyed.

The pathological process thus occurring is plain, and it is in this that the great merit of the elastic ligature consists. When it is applied there is a brief interruption of all circulation, but quickly the arterial flow recovers itself, the venous system being still impeded. Great distension of all the capillaries naturally ensues, superinducing a condition of things resembling that which is the cause of varicose ulceration of the legs. The danger of the process (I speak

solely from theoretical considerations) appears to be the presence of a mass of gangrenous organic matter immediately opposite a granulating and highly absorbent surface. For this reason in our recent case we kept outside the india-rubber ligature a loose skein of cotton yarn, about the same thickness as the ligature, and well soaked in carbolic oil. This was renewed three times a day, and a piece of lint kept well wetted with a permanganate solution prevented any offensive odour. On the third day it became evident that the ligature was no longer acting, and on examination it was found to be quite loose. You may remember the simple way in which this difficulty was combated. A slender rod of ivory, one millimetre in thickness, was passed through the ligature circle and twisted round a few times, in the manner in which a ready tourniquet is made from a handkerchief tied round a limb with a stick twisted through it. These ivory rods can be had of various thicknesses in the shanks of ivory crochet-needles. Ivory is, I think, the best material, on account of its strength, lightness, smoothness, and rigidity; and by this simple means ligatural pressure can be kept up to the very last to any degree of tightness required. On the fifth day the mass dropped off, leaving a surface which healed up kindly; and, with some constitutional treatment for the syphilitic taint, the patient made a good recovery.

I would particularly impress upon you that at the time of application, and while it is cutting through the skin, the ligature is painful. For this reason, just before commencing, we injected hypodermically a quarter of a grain of acetate of morphia in the neighbourhood of the operation, a procedure which much assisted the anæsthesia, and reduced subsequent local pain, by keeping the patient throughout the whole day of the operation in a drowsy, quiescent state.

THE SPIRIT RATION.

BY SURGEON-GENERAL W. C. MACLEAN, M.D., C.B.,
PROFESSOR OF MILITARY MEDICINE, ARMY MEDICAL SCHOOL, NETLEY.

SOME of the readers of THE LANCET are aware that on the 16th February I gave a lecture at the Royal United Service Institution on the Sanitary Precautions to be observed in the Moving and Camping of Troops in Tropical Regions. The subject of the issue of spirits to troops came fairly within the scope of my subject, and I accordingly offered some observations on it. So many communications have since been addressed to me by officers who take an interest in this subject that I venture to ask for space for a few remarks on it. In the lecture I thus expressed myself:—

"*Spirits.*—If there be any point of military hygiene that may now be regarded as settled beyond doubt or cavil it is this, that spirits are not only not helpful, but are hurtful to the marching soldier, everywhere I believe, but nowhere more so than in hot climates. The evidence on this point is overwhelming. The medical officers of the French army who have had great experience in the arduous campaigns in Algeria denounce the spirit ration as hurtful; and Dr. Morache, already quoted as a high authority on military hygiene, declares that unless coffee had taken the place of spirits it would have been impossible for the troops to surmount the fatigues of what he justly calls *ces pénibles campagnes*. Were I the medical chief of an army destined to take the field in a tropical climate, not a drop of spirits should, with my consent, accompany it, save what the requirements of the ambulance service demanded. The evidence shows that wherever soldiers, by accident or design, have been cut off from the use of spirits on marches, on active service, in temperate climates exposed to wet and cold, or in the tropics to ardent heat, or in laborious sieges, they have maintained their health, spirits, and discipline far better than when the once-deemed indispensable grog was in daily use. My colleague, Dr. Parkes, and the late Count Wollowicz, in a series of careful experiments on the use of alcohol carried on at Netley, and published in the 'Transactions of the Royal Society,' have placed on a sure scientific basis what was before a matter of observation, and have established that alcohol, far from increasing the power of bearing fatigue, even when given in a quantity which many spirit-drinkers would deem within the limits of moderation, lessens muscular force, and a quantity in excess of this, it was shown, entirely destroyed the power of work. The reason, Dr. Parkes says, was twofold. There was, in the first place, *narcosis* and blunting of the nervous system—the will did not properly send its commands to the muscles, and the muscles did not respond to the will; and, secondly, the action of the heart was too much increased, and induced palpitation and breathlessness which put a stop to labour. The inference was, 'that even any amount of alcohol, although it did not produce symptoms of narcosis, would act injuriously by increasing unnecessarily the action of the heart, which the labour alone had sufficiently augmented.' For fatigue, rest and food are the proper remedies. Alcohol given alone under such circumstances can only stimulate the already nearly exhausted heart to fresh exertion. Under some very exceptional circumstances it may be a matter of absolute necessity to do this, but even then we must follow Dr. Parkes's rule—namely, to give spirits in small quantity, not more than an ounce of brandy, and if possible it should be mixed with Liebig's meat extract, which has a great power of removing the sense of fatigue. Dr. Parkes even gives a formula, which is worth bearing in mind, for use under such circumstances; as for example, when troops, after a fatiguing march, are obliged to engage the enemy without time for rest and food, he advises two ounces of red claret wine, with two teaspoonfuls of Liebig's extract, in half a pint of water. Wine not being available, half an ounce of brandy or rum would be a good substitute.

"I cannot leave this important subject without adding that for twelve years I have, at Netley, had unrivalled opportunities of studying the effects of habitual dram-drinking on the persons of our soldiers, and I add my testimony to the immense weight of evidence accumulated by medical men in civil and military life, to the effect that alcohol is one of the most active agents in causing degeneration of the human tissues—in other words, disease, premature decay, and death. If this be true, as I believe it is, those officers who, by precept and example, strive to wean their men from the practice of this our national vice may with truth be said to be engaged in a patriotic work, and to deserve well of their country. Let me ask you to look at this alcohol question from another point of view. I hold in my hand a copy of a work known, I dare say, to many present—viz., 'The Sepoy War,' being the private journal of General Sir Hope Grant, edited by Captain Knollys, R.A. A modest record of very distinguished service. At page 108 we have the following passage, referring to the siege of Delhi:—'In order to fight to perfection, British soldiers must eat, and they must drink. Would they drank a little less. There never appears to have been any lack of provisions, and vast quantities of spirituous liquors fell into our men's hands. Drunkenness became fearfully rife, entailing with it increased sickness, as well as a relaxation of discipline, which it was necessary to repress with an iron hand.' We all know the stake played for at Delhi. It was the Empire of India. Mark how alcohol put the issue in peril. Mark also that from this danger we were saved only by that unrivalled power of maintaining discipline which British officers have shown at all times, in all places, and under all circumstances.

"*Coffee.*—It is almost superfluous to add that the best substitute for alcohol is coffee or tea. The French military medical officers vaunt, and with justice, the superiority of the light wines of their own country over the more strongly branded wines of Spain and Portugal; and they point to the fact that, when used in moderation, the aromatic principles and the various salts they contain exercise an effect on the digestive organs which is alike wholesome and agreeable. With all this the best of them give a decided preference to coffee. Morache, in particular, is emphatic in his testimony, and is even eloquent in its praise as an article of diet, a safe stimulant, an aid to digestion, and an efficient refreshment under fatigue. Coffee forms no part of the ration of the French soldier in time of peace; but Morache does not hesitate to urge its issue instead of brandy, and he instances certain regiments in which the custom of substituting coffee for the morning *petit verre* had much advanced the cause of temperance.

"That a cup of hot coffee is the best preparation for the fatigues of a march is indisputable, and it should never be omitted. It is much better that the men should have it before leaving their ground, and not at the half-way halt as was common in my time in India: it invigorates them at starting, protects, particularly the young soldiers, against the griping abdominal pains to which they are subject, particularly in the dark and chilly hour preceding the dawn; and the vigour it imparts helps the system to resist the miasm which at this hour is most freely evolved from the soil. It is worthy of remark that coffee was first issued to European troops for this very purpose, on the advice of the great Larrey, during Napoleon's Egyptian campaign."

It is said by some that my condemnation of spirits in the above passage "is too sweeping"; that to many, or at least to some, "alcohol in moderation is a wholesome and useful refreshment"; and, in the pages of THE LANCET, that "common sense and a knowledge of men's habits are sometimes more useful guides than the results of science," and on this ground the issue of a moderate allowance of alcohol to soldiers at the end of a march is justified. I may be permitted to say in passing, that I am not a temperance fanatic; I am not a "total abstainer" from the temperate use of wine and beer, although, perhaps fortunately for myself, so constituted as to be unable without swift punishment to use spirits.

In discussing a question of this kind affecting the interests and well-being of an army, we must disregard individual peculiarities—what suits this man or that man,—and look solely to what is best for the mass. It is a legitimate part of the argument to point to the fact that alcohol is the curse of the army wherever it serves: the fruitful parent of crime and disease. The same is said every day, and with truth, of men in civil life, although the amount of mischief under both heads, for obvious reasons, is more easily measured in military life. If it can be shown that in coffee or tea we have an article of refreshment that is equal, or nearly equal, to alcohol, it is surely an object of immense importance to encourage the use of the one that, according to the well-worn line, "cheers but not inebriates." It is quite true, as the writer in THE LANCET, already quoted, puts it, that a 42nd Highlander "would as soon drink red ink as red wine," and that during his march the prospect of a glass of whisky would be very pleasing "to look forward to"; and I am prepared to go a little beyond this, and to add that if he had the hope of two or three more on the top of the first, he would think it something still better "to look forward to." The question is not what from the pernicious effect of habit the soldier likes, but what experience and, if you like, "common sense," shows is best for him and the State, whose costly and valuable servant he is. This is the principle that should govern all our dealings with questions affecting health and discipline. Now, disregarding exceptional cases, I maintain that the evidence in favour of hot tea or coffee as a refreshment after fatigue, and their superiority in this respect over alcohol, is overwhelming. I have referred in the quotation from my lecture, given above, to the experience gained in the trying Algerian campaigns. Looking back to my experience among sportsmen in India, I cannot recall a single example of a spirit-drinker who was able for any length of time to expose himself with impunity to the sun, while it is notorious that abstainers from alcohol are capable of doing so, as a general rule, to a great extent.

In my lecture (when on the subject of sunstroke) I gave an instructive example. The troops holding Canton were called on to turn out at midday. A battery of artillery had more cases of insolation than all the rest of the force put together, the reason being that the canteen was opened by the officer commanding with the "good intention" of "fortifying" his men with a glass of grog before starting. My able friend, Staff Surgeon-Major Becker, an accurate observer, and in this case an eye-witness, is my authority for this pregnant fact.

I cannot agree with the writer in THE LANCET already referred to in his reference to science in connexion with this subject. As I have elsewhere said, science in this only confirms observation. The experiments of Dr. Parkes and the late Count Wollowicz, prove to a demonstration that even in temperate climates alcohol is a hindrance and not an aid to work. As many of my friends know, I am in the habit of spending my autumn vacation on the mountains of the north, and although not quite so young as I have been, I have again and again walked my whisky-drinking companions, friends, keeper, and gillie, to a standstill. In one word, alcohol in moderation may help a man to put on a "spurt," but it is no aid to a hard day's work; and I devoutly hope that the day is not distant when a War Minister will have the courage to decree that the issue of spirits to the soldier shall cease and determine.

Netley.

ON THE

VALUE OF THE STAINING PROCESS IN THE HISTOLOGY OF THE MORBID BRAIN.

BY HERBERT C. MAJOR, M.B. EDIN.,
ASSISTANT MEDICAL OFFICER, WEST RIDING ASYLUM, WAKEFIELD.

THAT the various tissues of the body are, in health, susceptible to the action of staining fluids to a different degree, is a point which has long been recognised by histologists, and one which has led, in the hands of many, to great practical results. But true as this is with respect to different tissues, equally true is the point and equally valuable the fact as applied to the same tissue under various morbid conditions. And yet it may be doubted whether those who have set themselves to examine pathological changes have availed themselves fully of the advantage thus afforded them. I refer more especially to the histology of the brain and the morbid conditions which that organ presents in various forms of insanity. In this great field of inquiry, so full of new and all-absorbing interest, it is of the utmost importance that every fact should be brought to bear, and each so directed as to act to the greatest advantage.

In no other department of histological research has the process of staining been more widely used or attended with greater benefit; but, nevertheless, I believe, and it is my present object to show, that its advantages may be still further extended.

That the grey cortical layer of the cerebrum is, under certain circumstances, with difficulty stained by the colouring solution employed, is a fact which has not, and indeed which could not escape observation. But there are conditions altogether independent of the state of the cerebral substance which may bring about such a result, while, on the other hand, there are others which favour the staining process; and all these it is necessary well to weigh and consider, in order to guard against the fallacies they might induce. By means of a strong staining fluid, it need scarcely be said, any nervous tissue may be deeply stained, and the same result will be obtained by prolonged immersion in a weaker fluid. But further, the susceptibility of the brain-tissue to the colouring solution will greatly depend on the method of hardening employed. It is a well-known fact that when preserved in chromic acid, the subsequent staining of the cerebral substance is less rapid and intense than when spirit has been employed; and hence it would happen that sections of the same tissue, on which similar staining fluid had been allowed to act and for equal time, might still vary considerably in depth of colouration, provided the hardening method employed were different in each case. I need hardly point out how, under these circumstances, any inference drawn from the relative intensity of the staining must be entirely fallacious and misleading. But as the fallacy is great if due precautions are not taken, so is the information derived weighty and valuable if uniform conditions are observed. To bring the matter to a practical issue: I believe that the method of staining the brain-substance, as usually pursued in investigating pathological change, is faulty; that, due attention being paid to observe uniformity in the hardening process and in the thickness of the sections, the object should then be, not to leave the sections in the staining fluid till "sufficiently coloured," but, having first decided by experiment the time required to colour a section of healthy brain with a solution of given strength, to allow the latter such time and no longer for its action in all cases. I have at the present moment before me sections representing cases of acute mania, epilepsy, general paralysis of the insane, and senile

atrophy of the brain, with respect to all of which I have followed the course above recommended. The staining fluid employed was logwood, which I first used on the earnest recommendation of my friend, Mr. Clifford Gill, of the North Riding Asylum, and the superiority of which over carmine, in this department at least of histology, admits I think of no question. It requires but a very slight examination of these sections, even with the naked eye, to make it evident that the action of the logwood has not been the same in all cases. In that of acute mania, for example, the grey cortical layer is deeply stained and accurately defined from the internal white substance, which is hardly coloured; but very different is the result as seen in the other specimens. In senile atrophy, for instance, the cortical substance is comparatively but slightly coloured, less so in some instances than the medullary portion, and the line of demarcation between them is imperfectly defined.

Other variations are to be noticed, neither with which, nor with the histological changes on which they depend, is it my object at present to deal. But I point to the fact as one of deep interest, and, as I think, of real scientific value. I would urge that the utility of staining should not be limited to the definition of cells, and the tracing out of their connexions, but that it should constitute, in some sense, a test for the cerebral substance, and thus play no insignificant part in the detection of pathological change.

West Riding Asylum, Wakefield.

Medical Societies.

PATHOLOGICAL SOCIETY OF LONDON.

TUESDAY, MARCH 3RD, 1874.

SIR WM. JENNER, PRESIDENT, IN THE CHAIR.

DISCUSSION ON CANCER.

THE discussion was introduced by Mr. CAMPBELL DE MORGAN, whose remarks appear in another part of our impression.

The PRESIDENT.—This is a very important and interesting paper, and full of suggestions. I trust that it will elicit some remarks from members of the Society who have given their special attention to the subject. If I might be allowed to ask one gentleman who is present to address us, I would call upon Mr. Simon.

Mr. SIMON.—Sir, I rise in answer to your summons, but it is the last thing I should have thought of doing except in obedience to you. Not because I should not wish to argue some of the points which have been raised in this paper, but because I feel that so very thoughtful and so well-prepared a paper can hardly be dealt with in extemporaneous argument. In reading Mr. De Morgan's thesis, I have noted certain points put forward by him; but I feel that it is almost impossible to deal with them adequately otherwise than in an essay almost as complete, deliberate, and careful as his own. But at least I am very glad to have the opportunity, in rising, of saying how very deeply indebted I think the science of this subject is to the clinical study of cancer which has been made at the Middlesex Hospital, and eminently by Mr. De Morgan himself. Mr. De Morgan has referred to doctrines which I think the researches made at the Middlesex Hospital have entirely put out of question—the notion of any direct origination of cancer in the so-called blood-poison. That doctrine was, a quarter of a century ago, put forward by various writers on grounds that probably even then were insufficient for what they pretended to support, but which now certainly are disposed of. Probably, however, in those days the writers who argued for the blood source of cancer did not so much mean the blood alone as the influence of the total system, the total material constitution; and if they had been pressed on the subject, they might have stated that they meant more than the blood taken quite separately from the solids of the body. But I think that perhaps Mr. De Morgan, in putting aside the blood quite effectually as an exciting cause of cancer, has not done justice to the influence that the total constitution of the body has on the development of cancer in the sense of predisposition. When one looks on the one hand at the hereditariness of the disease, fully established as I suppose it is in a large proportion of cases, and when one looks on the other hand at the insusceptibility of bodies generally to the inoculation of cancer, I think one is justified in assuming that a specific predisposition is necessary. And that specific predisposition I suppose it is which is hereditary—not like the germs which, as Pasteur has observed, make the pebrine of the silkworm hereditary, germs traceable through the ovum and so on; not hereditary perhaps in that sense, but the predisposition is hereditary as affecting the quality and general constitution of the body. I feel it extremely difficult to follow so well-considered a paper without asking the meaning of particular parts of it. But it seems to me that Mr. De Morgan rather combated the doctrine of the specificity of cancer, that he attributed a great deal to an almost accidental mobility of its elements. First of all, as regards cancer, I may say that I would use the word in the old-fashioned sense, not in the modern and, I think, inconvenient sense, the strictly anatomical. I think we have rather come to grief in using the word in that restricted sense. We want a word that shall cover what our forefathers meant; we want a word that shall cover scirrhus of the breast, medullary sarcoma of an extremity, glioma of the globe of the eye, epithelioma of the penis. We want a generic word to cover those cases, and cancer is a convenient word. I do not know any other that we can use. We want a word that we can turn into an adjective. Has cancer, in that sense of the word, a specificity, or does it differ from what I would call common tumours in the mobility of its elements? Speaking, of course, in Mr. De Morgan's presence, with great diffidence, I would say that I believe in the specificity of it. I believe that there is an absolute difference between tumours which will be classed as monstrosities, and tumours which are zymotic, which are contagious. I fully agree with Mr. De Morgan that the differences between those two great divisions of disease are not always expressed in a form or in differences of form that we are able to trace. Some rough approximation to distinctions may be made, but broadly we cannot in a general way distinguish them in form, and for a reason that I think is obvious. Perhaps to that reason I may give a word or two. The anatomical characters of cancer are, speaking in very general terms, signs of local irritation. Whatever stimulus is applied to the part, the part can only give certain vegetative results. We know what changes a part can go through in the way of its products. It cannot give bricks and mortar; it cannot be heterologous in that sense; it can give overgrowths that shall be more or less embryonic; it can give, in the more or less embryonic tissue that it produces, evidence that its process is more or less tumultuous; it can give forms that are more or less abortive. When one has gone through a few heads of that sort, one has exhausted the possibilities of variation in nutritive processes. The tumours which may be called mere monstrosities, which are as truly in that pathological class as the supernumerary finger or toe, are, it is true, more apt to have what one may call adult tissue, and to have that adult tissue without a quantity of abortive forms. That is a question of degree, but there is—I entirely admit it—an absence of complete anatomical distinction. This stimulus of cancer, whatever it may be, goes to the part, and the part, according to its nature, according to its own structure, undergoes changes. Then you get, according to the structural type of the part, that alveolated structure if the organ is a glandular or epithelial one; if, on the other hand, it is one of the connective tissue series, you get a stromatoid tumour, one of its many possibilities; but if the part is subject to mere hypertrophy you get the same sort of thing. Again, relapsiveness is not the test of cancer. The monstrosities may relapse, the mere textural hypertrophies. I remember a great many years ago to have removed a little bit of fibroid tumour on the top of a lady's chest. It had been removed before, but it had come back again. Her relative, who was an eminent member of our profession, not being very young, doubted if his eyes were sufficient to deal with the case, and he asked me to deal with it for him. I removed the tumour, going widely into the surrounding

parts, and I brought the edges together with three hare-lip pins. After a while the case recovered. A few weeks afterwards I was again called to see this young lady. I found that the tumour had grown again, and that in addition to that each of the six pin-holes had grown a tumour. I treated the case with cold. The tumours shrank, and the lady is at the present moment alive, and a joyful mother of children. Relapsiveness only indicates, I apprehend, that the hypertrophic tendency occupies a larger area than the hypertrophic manifestation. We cannot say to what extent it reaches, but as regards the comparative insignificance of it in relation to what we are talking of, it is enough to refer to a book that is full of all sorts of curious information—Mr. Darwin's book, in which he collects cases that have been from time to time published, chiefly in the medical journals, of the relapse of supernumerary fingers that have been amputated. That is a case in point—it is a monstrosity that relapses after operation. Nor is plurality—original plurality—a test of malignity. There again you get, and very often hereditarily, a textural peculiarity, an affection of one texture, a unitextural peculiarity. You get a plurality of permanent cartilaginous tumours. I recollect seeing a boy with seventeen on his two hands. Or you get a scalp covered with sebaceous tumours, or you get any number of fatty tumours scattered about the body. These are not common cases, but here you have one texture affected at a great number of parts — a great number of separate parts—with simple hypertrophic processes. A vast number of spots in one texture are in this wild way hypertrophic; but this is not malignant disease. That which is malignant is, I think, *sui generis*, and is not a matter of mobility of elements. But consider what it is. One cannot confine oneself to the part, I think. I confess, like Mr. De Morgan, that a part puzzles one. One cannot work at it only in part. One has to look a stage further on, and what one sees there is certainly *sui generis*. The part exercises on the tissues which receive its juices an influence which I would call—I can hardly use another word for it—an impregnative, spermatic influence—that is to say, the part causes these other organs to develop after its deranged pattern. Mr. De Morgan thinks that this is transplantation and the growth of the transplanted thing. Well, a great deal turns upon that as a question of fact. Some very thorough observations which have been made by a friend of mine who is in the room are in a very different direction. I will not say that there is no possibility of the growth of a transplanted bit of sarcoma or cancer—I use cancer to cover sarcoma—I will not say that there is no possibility of the growth of a bit of such tumour. No doubt there is; it would be very odd if there were not. But some observations which have been made by Dr. Crichton on the formation of secondary cancerous tumours have shown something very different from that; they have shown bits of structure undergoing changes in their own elements; not a bit of transplanted tumour growing in them, but the epithelial cells themselves undergoing transformation. Well, it seems to me that if one is to interpret cancer one must take it with kindred processes. It seems to me that it is part of a very large subject, and that one has no more right to deny the specificity of cancer, because the material forms of cancer are not always to be separately identified, than one would have to deny the specificity of small-pox because the fever of small-pox does not materially differ from the fever of measles or scarlatina. I think it is part of a very large subject, the subject of dyscrasis due to local infection. For a good interpretation of cancer I think we must look, not at the monstrosity tumours, but one must look at tubercle and at syphilis. The studies that have been dwelt upon in this room, the admirable discussions of last year, and indeed for many years past, on the subject of tubercle have thoroughly altered old impressions in relation to that disease; and the researches of the last year or two have shown that which used to be spoken of as constitutional disease to be in most intimate association with contagious processes—have shown it, in fact, to be indubitably contagious from body to body, as for many years it has been known to be contagious in the body which it possesses, and have traced it into intimate connexion with the septic ferments. Far be it from me to say that it always arises from causes outside the body, but that it can arise from a contagium outside the body is quite certain. One sees in the case of tubercle the immense influence of, if I may use the expression, the personal predisposition. I do not pretend to say what the external cause of tubercle is. Of course, we know that it is in intimate connexion with septic ferments,—the causes that produce septicæmia and pyæmia. Dr. Sanderson has quite established that. Let some animals be exposed to its influence, and they scarcely suffer at all; but let rodent animals be exposed to it, and they suffer almost universally. There you have on a large scale, as a quality of race, as a peculiarity of a whole set of animals, a constitutional susceptibility to a particular morbid poison illustrated. Then look at syphilis; a chancre inoculation on the lip, with affection of the glands, and with tertiary gummosities throughout the body after a certain number of years. Take that as one case; take as the other an epithelial cancer on the lip, with a swelling, probably a softening fungation, of the glands, perhaps an affection after a while in the lung or liver. Do those two cases differ more from one another than one might reasonably expect two species of morbid poisons to differ? Well, do I say that cancer comes *ab extrâ*—that cancer is an inoculation in the part where it occurs? No, I am a long way from saying that. In the present state of knowledge on the subject, I think we are driven to the doctrine that Mr. De Morgan has so well defended and illustrated of the uni-local origin of cancer. We are driven, I think, first of all to recognise that the essence of the disease is the development, as I said, in that spot of a specific impregnative influence. Such an influence is developed in a single spot of the body. What has developed it? We have to choose between two positions: on the one hand, that there has arisen in that spot of the body a property entirely *sui generis*, something for which we have otherwise in the body no analogue; or that there is a contagion from outside. It seems to me that we can hardly escape that alternative. I do not venture to insist upon the doctrine of an external contagium in cancer. But the point I have wished to insist upon, very imperfectly—for this matter ought to be discussed far more deliberately if one wished to do justice either to the argument of Mr. De Morgan or to the one I am stating—the point on which I wish to dwell is that the process followed from first to last is one which brings cancer into relation with tubercle evidently, and with syphilis less evidently, but I think certainly as members of a family of diseases as definite as the family of infective fevers, the family, namely, of chronic dyscrases that arise in local infection. Then whether that local infection in cancer is a local neo-genesis, is a spontaneous product, something indigenous to the body, or is a contagium *ab extrâ* is, as I say, a question on which I would not pretend to speculate.

MR. JONATHAN HUTCHINSON.—I think it is a pity that a moment should be wasted, although I should have very much preferred to remain silent, and to hear what others have to say on this important question. I have listened with extreme pleasure to the very able paper which Mr. De Morgan has read to us, and my pleasure perhaps has been increased because his views are very much those which I entertain myself. Some fourteen or fifteen years ago I read a paper before the Hunterian Society on a similar subject, contending for the local origin of cancer, and I have ever since that time taught this doctrine to the students with whom I have come in contact as earnestly as I could, because I think that in the belief in the local origin of cancer rests our only hope of dealing satisfactorily with it as surgeons. I also believe that our patients' interests are prejudiced most seriously by the sort of hesitancy in the belief of this doctrine by a large section of the profession. It must have happened, Sir, to you, and to all members of this Society very frequently indeed, to see cases which, if treated on the theory of the local origin of cancer, at an early stage, might have been satisfactorily cured, but which, having been neglected, have been allowed to get possession of the body, to infect the blood, to infect the glands; and a disease which was curable in the early stage has become in the end totally incurable. I quite concur in the concluding remarks of Mr. De Morgan's paper, that it is in this direction that we must hope to fight this foe; I fear not on a very large scale, because there still remains a great proportion of the number of cancer cases in which the disease is local at first in a position in which it cannot be attacked. But putting those aside, we still have a very considerable number which we can attack most satisfactorily if we believe that it begins as a local disease. Now,

in contending that cancer is for all practical purposes a local disease, and that it is very important for surgeons to believe that it is such, I by no means wish to put aside the argument of those who say that it is also constitutional. I think Mr. De Morgan hit the point very exactly. So far as I understood his argument, it was that cancer is not a blood disease. To use the expression "a blood disease" is to mislead us. I was glad to hear the remark that fell from Mr. Simon to the effect that those who in former years, perhaps somewhat erroneously, used this expression had done so without any intention of excluding the solid elements of the body. No doubt it is, so far as it is constitutional, a disease of the solid tissues, and not of the blood. I think the sooner we get rid of the expression "blood disease," and use the term "constitutional," or "disease of tissues," the sooner we shall get to clear ideas on the subject. Then we come to the very difficult subject which Mr. Simon has just been arguing. Here again I thank him most sincerely for protesting against the right of modern histologists, to whom we owe so much (and no one is more thankful to them than I am for their work in a special branch of the subject) to give a new meaning to the term cancer. I think it is far better to keep our old words in their old uses. Although histologists may classify the various diseases which make up morbid growths and cancers more minutely, according to their histological structure, still I think it is far better that they should not take the terms carcinoma or cancer and give to them restrictive and completely new meanings. I know there are difficulties, and I was glad to see that it was a difficulty also to Mr. De Morgan, who, I believe, adopts a new classification, to continue the use of the term always accurately. He used it several times in the modern sense, and several times, I think, in the old and much more comprehensive sense. It would be in the comprehensive sense that I should like to use it, as denoting all forms which can be classed as malignant diseases. To return, then, to Mr. Simon's question, whether we are to say that cancer is specific or not, I confess I do not attach so much importance to it as Mr. Simon appeared to do: because, after all, specificity is a relation. If I say a thing is specific, I mean that it is specific in relation to something else, and I have to define what each of these things is from which I say it specifically differs. There is no doubt that cancer has peculiarities; otherwise we should not need to have any name for it. There is no doubt again that almost all the morbid processes in the human body have a relationship, and what we have to define is rather the degree of relationship which they have to each other than to contend that this and that are so absolutely distinct that we are to say that this is one species and that is another species. We must define species before, as it seems to me, we shall gain any practical good by arguing as to whether cancer is a separate species or not. A separate species from what? Because it enters, I think, by degrees which it is very difficult to distinguish, into relationship with several other diseases which have been already alluded to this evening. Illustrating its relationship, I would mention one which I think Mr. De Morgan has not alluded to—that is, the occasional transmutation in hereditary transmission. And this is a line of argument which I think may be applied in elucidation of many other diseases besides cancer. I think we might prove conclusively the essential relationship of different diseases, or diseases which have different names, by observing whether in hereditary transmission you get them transmitted. Say you get rheumatic gout transmitted into gout, or in the transmission of gout you get rheumatic gout as the product, then I hold that those two things stand in very close relationship to each other. Now take the case of the transmission of what I would ask permission to call the cancerous tendency or proclivity, which I suppose consists in some kind of morbid mobility of cell-growth, a tendency to go into insurrection as it were, amongst the cells, an unwillingness to submit to continuous government, exhibiting something of the difference which (if I may use such an illustration without offence) exists among the different races of mankind. Amongst the stupid Teutonic race there is a willingness to submit even to a certain amount of oppression rather than rebel, while among the more vivacious and more freedom-loving Celts, there is a proneness to rebel, an unwillingness to submit continuously for a long period to any systematic government. So I think we have in different individuals some sort of different mobility of tissue. In one person the tissues are held together by a somewhat slighter tie than they are in others, and under certain kinds of irritation they rebel, and the cells set up on their own account, and establish a little *imperium in imperio;* and to that rebellion of cells we give the name of cancer. Then I wish to ask, as a matter of purely clinical fact, whether we do not sometimes observe in the hereditary transmission of a cancerous tendency transmutation, and whether we do not in that fact of transmutation get a proof of relationship. I allude especially to the distinction between innocent tumours and malignant tumours. I rather put the question to those who have more experience on that point than myself—whether it is not tolerably common to notice this. I believe the most definite instance of it is in respect to common warts. It has chanced that I have had some remarkable instances myself. I believe that patients who are liable to common warts in unusual numbers will generally be found to have relatives who have suffered from cancer. I believe this is an observation which came first from that home of observation in reference to cancer—the Middlesex Hospital. Mr. De Morgan will correct me if I am wrong. I think it has been noticed there—and I can confirm it—that in several remarkable cases in which patients were covered from head to foot with warts, there were near blood relations who had been suffering from cancer. And there has certainly been observed in hereditary transmission the same proof of relationship between the various forms of innocent growths and those strictly malignant. Then as regards hereditary transmission there is another interesting series of facts which should be carefully collected as to what becomes of the children of parents who were cancerous at the period of birth or of conception. I think that we might easily collect a considerable number of instances of that kind, and I feel sure that we might get some interesting facts from them. It has happened to me to investigate these facts, in several cases in which very young children became the subjects of cancer. I recollect especially one young lad, remarkably healthy and well grown, who at the age of eighteen months became the subject of cancer of the testis. In his case there was a most definite history of cancer in near relatives. In several other instances I have seen the same thing. Then I think it should be observed also that the kind of cancer is often changed, that the mother who has suffered from cancer of the breast has a child who perhaps suffers from one of the various forms of cancerous action which attack different tissues of the eye. In passing, let me remark that I suppose we have come pretty much to the conclusion that the differences in cancers and malignant tumours depend on the tissue which the cancerous action commences in. The cancerous action, if we may be permitted to use such a term, is pretty much one and the same, and the differences depend upon the cell-tissue in which that action begins. I say I think we very often see a transmutation in hereditary transmission. That which was scirrhus in the mother becomes, perhaps, soft cancer in the child. I think these are most of the observations that I have put down as wishing to make; but I cannot help again thanking Mr. De Morgan for his very able paper, and for directing the attention of the profession to a most important point. I headed a short article that I wrote ten years ago, in the London Hospital Reports, "The Successful Cultivation of Cancer," and I recollect giving precise directions to those who wished to let their cases pass into cancer, how they should do it: how they should neglect a little ulcer, and let the patient go on, saying that he had nothing but a little wart on the lip; how they should let him go on smoking, and so cultivate cancer; or tell a man with a little nodule on his eyelid to put a little cream on, and that it was of no consequence, and that he might pick it from time to time, so that, trusting to the local origin of cancer, he might breed for himself some of the most malignant forms of the disease. My reason for adopting that title and using the style I did was my anxiety to direct the attention of students and of the profession to the practical importance of acknowledging the local origin of a great number of forms of cancer, and the importance of very early treatment, if we wished to secure our patients against becoming constitutionally affected.

The discussion was then adjourned to the next meeting.

CLINICAL SOCIETY OF LONDON.

FRIDAY, FEBRUARY 27TH, 1874.

MR. PRESCOTT HEWETT, PRESIDENT, IN THE CHAIR.

DISCUSSION ON PYÆMIA.

THE adjourned discussion on the President's paper on this subject was resumed.

MR. CALLENDER.—I will, if you please, take up the consideration of this subject from the point at which it was left at the last meeting, in order that I may endorse all that fell from Mr. Savory with regard to our indebtedness to yourself for bringing before our notice facts which show us clearly that pyæmia is a disease which is not limited to hospital practice, but that it may occur under circumstances which at first sight might appear to be particularly favourable to its avoidance. And further, with reference to these cases, I should like to say that I think they show conclusively—at all events a considerable number of them do—that this disease must have arisen entirely in private practice, for I observe that they were cases in which the disease had been established before you, Sir, had been called in consultation; therefore they could not in any way have been cases infected from hospital wards, the infection being carried from them to private rooms. I think, after the remarks I have heard made on this subject, that that is a very important point to which our attention should be directed. Now, as you have, by referring to the occurrence of pyæmia in private practice, opened up the whole question of the consideration of this subject, I shall make bold to refer generally to pyæmia, and I shall make my remarks, so far as possible, practical and clinical. I shall refer—as I think we ought always to refer in discussing such subjects at the meetings of this Society—especially to the question of treatment. Now, when some years ago I was called upon to take charge of a large number of hospital cases, I felt, as Mr. Hulke expressed himself, the necessity of having some distinct plan or scheme by which one might be guided with regard to the pathology of these various affections. I think we shall make but very little progress in the consideration of the subject of pyæmia unless we mark out for ourselves comparatively new routes along which we should travel. It may appear somewhat heterodox if I commence by saying that I think it is extremely desirable that we should ignore altogether the use of the term pyæmia. If by the use of the term we are to understand all those conditions in which in the course of various diseases the blood may become so affected that suddenly we may have the formation of abscesses in various tissues, or outpourings of pus into synovial or serous surfaces, then I imagine we must extend the term so as to make it include all those cases in which, in the course of the slow decay of chronic diseases or in tardy convalescence from various affections—such as typhoid fever or scarlet fever,—we have the occurrence of these various abscesses. But it must be recollected that in nearly all these cases the formation of the abscesses is associated with a certain amount of inflammatory action; and this is a condition of things which I am not disposed to group among cases of pyæmia. Certainly it does not seem to belong to those cases of pyæmia which we as surgeons consider to be typical, as interfering with the progress of surgical cases. Pyæmia is also a term misleading if it is for a moment to be supposed that it is to be associated with the presence of pus in the blood; for nothing is more clear than that this notion, which originated in the early days of the consideration of the subject, is absolutely erroneous, for there is no evidence to show that pus, as such, is ever found to be present in the blood. Further, it is misleading in that it has induced observers to look for certain sources from which pus might be derived. They have, for example, thought that the pus might come from inflammation of the veins; but I am not aware of any evidence that bears the test of strict scientific investigation which shows that the veins are inflamed, leading up to the production of pus; whereas, on the other hand, there is abundant evidence to show that veins may become filled with clots. But clots, as stated by previous speakers, may undergo disintegration—may be filled with a puriform, but not with a purulent, fluid. The term is further misleading in this respect—that it has induced surgeons more especially to look for an explanation of the occurrence of pyæmia in association with certain affections, particularly in cases in which it is supposed that the veins have lain ready (if I may use the expression) at the bases of wounds to take up any infecting product; as, for example, in connexion with various injuries and diseases of bone, in connexion also with another class of cases which occur in the course of the puerperal condition following parturition. Indeed, if there is one thing to my mind clearer than another it is this. In all these cases, as Mr. De Morgan has expressly pointed out, it amounts to this—that in such wounds, or injuries, or conditions of parts, we have the wounds so circumstanced that they are filled with cracks and crannies in which matter may lodge, and from which it is with difficulty dislodged—where it may putrefy and give rise to the serious affections with which we are, unfortunately, too familiar. Now, when I came, in the interests of the patients submitted to my care, to look at these considerations—when I made up my mind to ignore altogether the use of the term pyæmia in reference to these diseases,—I had to consider how best I might group together, so that one might have certain distinct landmarks which one might follow in the treatment of one's cases, the various pathological conditions which past experience seemed to me to associate with the various untoward results occasionally following the practice and treatment of surgical cases; and I came to the conclusion that on the whole it was desirable to group the cases into three distinct sets. In the first group of cases I placed all those which might be spoken of as instances of primary septicæmia; cases, that is to say, in which the poisoning of the blood—you will pardon me if I use homely expressions in reference to all these matters; I think it is very desirable to speak in plain language regarding them—is due to the action of those acrid and irritating fluids which are poured out into the wound during the first twenty-four or thirty-six hours which follow its infliction, substances which are so acrid and irritating that if they are lodged in the tissues, lodged in the wound, if an escape or vent is not provided, they rapidly produce most serious constitutional symptoms. In the second group of cases I place all those that may be spoken of as instances of secondary septicæmia; cases in which the poisoning of the system depends upon the decomposition of residua, whether those residua happen to be sloughs or matter which is passing into a putrid state. And it must be recollected respecting either of these two conditions, that we may have either a small or a large quantity of poison present in a wound, or we may have it passing into the system of one who is weak and feeble, and readily succumbs to its action, or through the system of another who is robust and strong, and resists its influence. Thus we have a great variety of modifications in the conditions, appearances, and progress of the cases which we have to treat. Then, beyond this, there is a third class of cases to which I should like especially to refer, which I would speak of as instances of thrombolosis. We are all aware, as a previous speaker, I think Mr. Bryant, pointed out, that this is a condition extremely apt to occur in connexion with contusions—a condition in which the veins become filled with clots. These clots frequently undergo disintegration. This disintegration may occur in the course of chronic diseases. I have known it occur in the case of phthisis, but such occurrence is comparatively rare. On the other hand, when the system becomes poisoned through some septic influence, the change produced in the fibrine is such that, deposited in the veins, it rapidly does undergo this disintegrating process. When this disintegration has been established after a certain time the disintegrated fluid passes into the general circulation, lodges at various points in the tissues or organs of the body, and there produces what I should prefer to call secondary deposits. It attracts around it fresh coagula; these coagula again disintegrate and break down, and we have, not abscesses, but softening, disintegrating masses and fibrine. And here I think is the material distinction between the cases I refer to and those I set out by speaking of as instances in which, in the progress of certain chronic diseases abscesses, are formed in various parts of the body. In the cases I now speak of we have secondary deposits formed without the inflammatory process, whereas in the other we have the abscesses usually

associated with local inflammations. Now, I should say further, that this condition of thrombolosis must not be confused (and I am sure it is necessary that we should have a distinct term to indicate it) with the condition which we have heard spoken of under the name of embolism. We are, of course, all familiar with the fact that vessels may have clots formed within their canals. We know that these clots may have a blood-stream washing against them, and cast off certain portions. These portions may be washed through the circulation, and may lodge and establish a blockade at certain points. But there, so far as the clot itself is concerned, the change ends. The clot does not undergo disintegration; it remains with the blood as fibrine. Fresh clots form, which are also fibrinous, but I do not understand that these cases of embolism have these disintegrating processes which I think are characteristic of another condition spoken of as thrombolosis—a condition which may occur independently, but is frequently mixed up with these two conditions that I have referred to as instances of primary and secondary septicæmia. Further, I may say that in outlining the main point of an important pathological subject such as this, it is quite impossible to take into consideration the various other matters which may, so to speak, fringe round the subject. For example, we may have cases of erythema, we may have various forms of erysipelas. I have no doubt myself that these are to a certain extent connected with the greater changes I have been referring to. What I wish to place distinctly before the Society are these three chief changes, because I think they lead up to a very accurate view of the sort of treatment which, in the management of these affections, we ought to adopt. Passing on to the consideration of this question of treatment, I suppose most members of the Society will be at one with me when I say that very little can be hoped for from treatment in these cases when the disease is once fairly established. It is quite true that in certain cases a comparatively robust patient may drift through the affection, but I doubt very much indeed whether any treatment which has hitherto been recommended has, except in the general sense of good nursing and good food, been of any avail in such cases. This leads me to speak strongly as to the importance in all these cases of what I would term preventive treatment. I shall not dwell long upon the subject, because recently I have had occasion to refer to this treatment of operation and other wounds, but I may point out what I consider to be the leading features which should guide us with reference to this treatment. And, first, and I think I am justified in saying most important of all, I would put the question of drainage, so that all these acrid and irritating substances which are effused after the first few hours, and all those substances which may cause local and constitutional symptoms to arise, may be carried out from the wound. Next to this I place cleanliness. Cleanliness goes to a great extent with the drainage which I have already referred to, and with this I may speak of the use of those remedies which of late have been much spoken of under the term of antiseptic agents. Beyond this I speak of ventilation of the wounds. It is, I conceive, absolutely necessary in all these cases that the air about them should be comparatively pure and clean. Then again I refer to the isolation of wounds. I do not myself believe in the contagiousness of these affections, except in the broad sense in which one may understand that a patient is in unfavourable circumstances when he is in a polluted atmosphere, especially polluted by excreta or effluvia from pyæmic cases, or in that gross sense in which one may understand that a nurse may by hazard carry poison from one wound to another. In that sense I believe that these affections might be looked upon as contagious, but with ordinary care and ordinary precautions I do not believe that it can be propagated by any influences short of those to which I have referred. Then, lastly, with regard to the question of treatment, I would say that I think we cannot too highly rate the importance of rest. And if I may venture to throw out the suggestion, I would say that there has been a failure in this particular direction, which has given rise to the greater number of mishaps which have occurred, especially after amputation in the lower extremity. From the apparent necessities of these cases, from the dressings which they require, the parts have been disturbed and not allowed that rest which I think, during the first four or five days after the operation, should be invariably provided. With reference to this point, I do not know whether the members of the Society were attracted by a statement made at the last meeting, which I consider to be a very important one, by Mr. Savory. He made it when speaking of the dialysing property of animal membranes, and his remark was to this effect: that it was not at all improbable (and I quite agree with him with reference to the probabilities of the case) that in those cases the granulations on the surface of wounds formed a sort of shield or protection to the wound, and prevented the passage into it of septic agents, but that when, under various circumstances, these granulations were broken through, when, more especially by the unrest of a wound—for example, the unrest to which amputations of the lower extremities are commonly subjected—these granulations are broken through, fissures are formed in the wound, through which septic matters may filtrate so as to pervade and poison the system. With these views with regard to the pathology of the affection, and holding strongly these opinions with regard to the preventive treatment to be adopted, all the patients under treatment in my wards have been rigidly disciplined during the three years I have filled the office of surgeon to our hospital. I will not venture to intrude upon the Society with the results of my own experience, but I must ask to be permitted to make this one statement with regard to those results, that during the three years to which I have referred, out of a great crowd of patients under treatment in the wards, there have been but two cases of septicæmic poisoning and but two cases of thrombolosis; and I may say, as it is possible that I might commit an error by omitting the statement, that we have not had one death from erysipelas arising within the wards of the hospital. I cannot but feel very strongly on this subject. I do believe, and I can only trust that my belief will be confirmed by the experience of others, that we have it in our power to control these affections. I would not say that these diseases can be blotted out, because we know that with all the care and all the supervision lavished upon such cases, errors of omission and commission will occasionally creep in, but I do believe that we have it in our hands so far to suppress these affections, that practically they may cease to embarrass us in the treatment of surgical cases.

Mr. R. BARWELL.—I am sure no one in this Society can have listened with more interest to the remarks which have just fallen from Mr. Callender than I myself have done, and also to those which fell the other night from Mr. Savory. But I cannot help being struck with the fact that in speaking of the various causes of pyæmia most of those whom I have heard speak at this Society have confined themselves very much to the condition of affairs in the wound itself, and although this is an important, it is not the part which your paper especially called forth. For we see again and again patients with large fetid abscesses, be they in the ischio-rectal fossa, or be they in the neighbourhood of bones, with the pus in the very worst position as far as we can judge, and in as bad an anatomical condition as may well be imagined, and yet these patients escape all pyæmic poisoning, while other patients with comparatively no especial sign about the wound, no fetid pus, get pyæmic poisoning either in the form of pyæmia proper (and I must still use that word until we have another), or its ally, erysipelas. In all cases of poisoning we have two things to consider—the poison brought to the system, and the system which takes it in; and I think your paper more especially refers to that condition of the system liable to take on pyæmia. And whether we consider that this condition of blood may be produced by what Sir James Simpson called hospitalism, or whether it may be produced accidentally, or be constitutional, we still find that there must be a certain condition of blood or of system rendering the patient susceptible to this form of poisoning. I need not here instance the peculiar condition of system which is combined with albuminuria. You yourself have pointed out of what grave importance this is in the prognosis of injuries of the head. We all know we must, if we can, avoid operating on a patient affected with albuminuria; as, if the kidney disease do not kill him, he will probably die either of erysipelas or pyæmia. Hence we find a state of blood which introduces the pyæmic poison, even when the wound itself is in the most favourable circumstances. This is a constitutional state. And now as to the artificially produced state—that,

namely, which has been called hospitalism; and here we must clearly distinguish (and I am sorry to say Mr. Erichsen does not to my mind sufficiently clearly distinguish) between badly-ventilated, and ill-drained and ill-kept hospitals, and hospitals perfectly well kept, perfectly drained, &c. Every hospital or every private house, it does not matter which, that has bad drains and bad ventilation will be liable to spread a pyæmic condition as soon as an operation is performed in that building. It does not matter whether it be such a hospital as there is at Lincoln or in some other towns, or whether it be a private dwelling in the healthiest part of the country, as soon as we find bad ventilation, bad drainage, and uncleanliness in those dwellings, so soon do our patients run a danger of pyæmia, and in this way we have the most strongly marked artificial production of pyæmia. But now let us take the case—and this is really where the comparison should come—between the very best kept and the very best constructed hospitals and private dwellings; and the question is simply whether there is a larger percentage of pyæmia in the hospitals than there is in the dwellings. Well, Sir, I am sorry to say our statistics in the one or the other are not sufficiently complete for us to answer this question, but we may gain some inkling of the subject from considering the fact that none of us, I suppose, will dare to operate upon a case of ovariotomy in the general surgical ward of a hospital. Here I think it seems pretty clear that there must be some amount of septic influence in the air. But this case is rather peculiar, and there may be in other cases, in operations, for instance, upon limbs, counterbalancing advantages in the hospital which may counteract the slight pyæmic influence sufficient to affect a case of ovariotomy. I would point out this fact that we have in our larger and better ventilated hospitals very few cases of pyæmia considering the number of operations performed—I think in some of them only about 1·5 per cent. per annum of cases of pyæmia after operation. Do we get a less amount of pyæmia in private? Only the other day Sir James Paget told me that he had a case of hospital gangrene in private practice, and he mentioned that it was the fourth case he had seen during his career in private, while in his public or hospital practice he had seen but three. This is a most striking circumstance, and I cannot but think that if all the cases which occurred in private practice were put together we should find them very much more numerous than is usually imagined. I was called in the year 1868 to see a patient then under the care of Sir Thomas Watson, on account of a knee affection which had come on during a certain disease of the lung. I found it to be a clearly marked case of pyæmia. The other joint became subsequently affected, and the patient died. The only source of suppuration in the case was an eruption in the skin, which the patient had scratched, and caused little sores and scabs to form, underneath one or two of which there was pus. This was in the year 1858. I do not think I shall be committing any breach of confidence in mentioning the name, Panizzi, who was attended by Dr. G. De Mussy, who has left this country. Dr. G. De Mussy was attending the case when he had pyæmia, and Sir Thomas Watson was called in afterwards. Therefore there was no carrying in of the pyæmic influence from a patient that Sir Thomas Watson had seen with me to the other patient. These cases show at all events that in private practice we have a large amount of pyæmia, and I am sorry to be able to bring forward another case which occurred to me but a very few days ago. A lady with a very small exostosis on the metatarsal bone of the left foot wished me to remove it. She was sixty-four years of age, and perfectly healthy. The exostosis—a mushroom-shaped one, with a very small stalk, not bigger than a barley-straw—was nipped off with the greatest ease, and the wound carefully dressed with carbolic acid. The house in which she lived was perfectly healthy and pure, and every precaution which could be taken was, I believe, taken in the case. But when I saw her, six hours afterwards, already the pulse was failing; and I learnt from her son that, previous to the operation, she had expressed her strong belief that it would kill her. In spite of this she met us with the greatest cheerfulness and courage. She had made all her preparations for death, and, from the time of the operation, it was with the utmost difficulty we could get her to take food or any form of stimulant or medicine. This was on Thursday—yesterday week. On the Sunday night the temperature rose to 100·4°. On the Monday morning the knee and shoulder-joint on the same side of the body—the left—became affected; and from that time, when pyæmia may really have been said to have set in, the patient rapidly sank, and died one day within a week of the operation. In that case I happen to know that every sponge, every piece of lint that I used was in perfect order. The instruments even had been washed in carbolic acid. This is not a very usual precaution with me; but I had taken it at that time, and there was no possible precaution omitted with regard to the dressing of the wound that I could have taken if I had now to do the case again. But then comes the question whether we may not also have a moral influence so far depressing the system as to produce this pyæmia. I can only make it out in this way. You see in my own private practice I have had within the course of four years two cases of pyæmia: one occurring before I came to the patient, and one in operation. Sir James Paget has had no less than four cases of hospital gangrene, and I am not aware how many cases of pyæmia he may have had. You, Sir, have brought forward a goodly number; and I cannot but feel that if all the untoward cases occurring in this way were published, we should have a great many more. But it requires some courage. The fact of such cases occurring in private practice is very depressing to a man's feelings with regard to his work; and to publish them afterwards is not the best way to procure more cases of operation. I fear we shall never get absolutely to the bottom of these statistics; nevertheless, the undetermined number in private practice is, I suspect, very much larger than is generally known, and I think it tends very much against the idea of hospitalism. Though, to conclude, I may say again, referring to cases of ovariotomy, my own belief is that there is a septic influence in the air of hospitals which, however, in ordinary cases of operation in the limb, is more than counterbalanced by the great attention and good diet which the patients ordinarily receive there.

Mr. BRUDENELL CARTER said that he would endeavour to go one step further in a direction which Mr. Callender had pointed out—that is to say, in the clinical rather than in the pathological direction. The Society had heard from Mr. Hulke of the defined line which separated pyæmia from septicæmia, when these conditions were artificially produced in the laboratory, but no such line was seen in the observation of disease, and it would be impossible to frame any definition, either of pyæmia or of septicæmia, which would exclude the other, unless it also excluded a vast number of cases of an intermediate character. He preferred to use the term septicæmia as the more general one, and he thought that cases of blood poisoning might be conveniently and usefully divided, for clinical purposes, into two classes—those in which the patient was poisoned by something formed within his own system, and those in which he was poisoned by something formed elsewhere, and conveyed to him by some form of inoculation or contagion. Both these classes might be illustrated by the clinical history of gonorrhœa, a disease which the speaker regarded as essentially blood poisoning, in which the urethritis was but a local symptom, and often not the only local symptom, of the general malady. He had lately seen a very powerful, robust young countryman, who contracted a gonorrhœa soon after coming to reside in London. On the second day of the urethral discharge, the lids of the left eye became swollen and brawny, and the conjunctiva poured forth a copious sanious discharge. On the evening of the fourth day, intense pneumonia declared itself, attended with extreme depression. It was, of course, impossible to exclude inoculation of the eye, although the character of the discharge did not support the hypothesis, and inoculation of the left eye was comparatively rare. The urethritis and the pneumonia, and in all probability the ophthalmia also, might be here regarded as the results of septicæmia, the patient having been poisoned by the woman from whom he derived the infection. On the other hand, it was well known that a patient with gonorrhœa might poison himself after a certain period of continuance of the discharge, and might suffer either from the so-called gonorrhœal rheumatism or from those more severe consequences which the President, in his opening address, had described. If this distinction were a just one, did it not teach that the septicæmia in which the patient poisons himself was a state that might arise, independently of external circumstances, from condi-

tions of nervous force and of general nutrition. He believed that many of the local tendencies to the destruction of tissue rather than to its repair were distinctly of this character, and he found that, as far as the cornea was concerned, this was certainly the case. He believed, therefore, with regard to septicæmia from self-poisoning, that surgeons would do well to think chiefly of the general nervous force and state of nutrition of their patients. Proceeding to the second class, it seemed obvious that a morbid secretion capable of poisoning the patient who produced it might be also capable of poisoning others, and it was equally obvious that such poisoning was more likely to occur in hospital than in private practice, because in the hospital there were more recipients of the poison, more persons who might be exposed to some gross or subtle form of contagion. Here, then, the influence of external circumstances came largely into play, and here the use of cleanliness, ventilation, disinfectants, and such means, might be expected to render the disease far less common than it would be if such precautions were neglected.

Dr. GLOVER said it would be interesting to know if Mr. Barwell had any cases of pyæmia in the hospital at the time of the occurrence of the case in private practice.

Mr. BARWELL said he had no case of that kind under his care.

Mr. CADGE.—If I avail myself of the privilege accorded to strangers in this important discussion, I have the less reluctance because it may perhaps be not altogether uninteresting to compare instances of provincial experience with those of metropolitan surgeons. In doing so I will endeavour to keep clear of those abstruse questions as to the origin, nature, and agency of the causes of pyæmia. I think they are subjects far too abstruse to be fully elucidated by discussion, no matter how distinguished or how eminent the members of the Society may be. They seem to me rather to require patient working in the laboratory, in the dead-house, and in the study, and I despair of anything like a full elucidation of the subject from this or any discussion whatever. But with regard to the occurrence of pyæmia and the facts surrounding it, there, I think, we are travelling quite within the proper lines of discussion. You yourself have initiated that discussion, and to that point I would simply, as far as regards my own experience, confine myself. It is now about twenty years, or rather more, since I became attached to the Norfolk and Norwich Hospital. I am grieved to say that for a considerable part of that period the building has fallen upon evil times with regard to this question of pyæmia. We have had within the last six or eight years a decidedly increasing amount of pyæmia in hospital practice, and that notwithstanding that the hospital is fairly well provided in regard to cubic space and beds, with a perfect system of drainage which has been established within the last few years, and with other precautions which have in times gone by seemed to secure us from these plagues of surgery. Still the fact remains, that during the last three years—I go no further than that—we have had twenty-one or twenty-two deaths from pyæmia in the hospital. Yet this is on the whole clearly and thoroughly to be accounted for. The way of accounting for it seems to me to touch the very question we have at issue between private and hospital practice, and it arises chiefly, in great part certainly, from overcrowding the wards of the hospital. During twenty, or twenty-five, or thirty years, we have had no extension of the hospital. It accommodates about 140 patients, 70 or 75 on each side. We have had no extension, but during that period there has been a large increase of population, and there has been a still greater increase in the growth of mechanical contrivances and machinery, particularly of agricultural machinery, which has thrown into the hospital a very large increase of serious injuries, accidents, and wounds of all kinds. I have no doubt in my own mind that the increase and development of pyæmia in that institution is largely due to this increase of serious accidents and wounds which have not been properly cared for by extension of hospital accommodation. Some proof of this is found, I think, in this fact. Of course by far the major part of these cases of injury and disease, and of all other surgical operations and diseases, occurs on the men's side of the hospital. Out of twenty-one cases of pyæmia during the last three years, only one has occurred on the women's side, and this, I think, must be a proof that we have an overcrowding, not in the sense of a deficient cubic space, but in the sense of numerous cases of a bad kind in that space which we could not well avoid. We have been obliged to take serious steps towards altering this condition of things, and those steps are now in progress. Still that state of things remains. We have shut up one ward after another, we have abolished the use of sponges, we have weeded out beds from each ward, we have looked after the ventilation in a very careful way, and the result of these experiments we have not yet had time to prove. So far as we can tell, I am afraid that they have wrought no benefit, and I should not wonder that the end is that we either close the hospital or make a large extension or a full reconstruction of it. Well, if that be the case in hospital practice, I am happy to turn to the absence of pyæmia so far as private practice is concerned. I may be permitted to say that during the last fifteen or twenty years a considerable share of both surgical operations and all kinds of surgical cases has fallen in my way in the city and in the country for twenty or thirty miles round, and I think I can say that during twenty years and more, with one exception, I have not come across a case of pyæmia; and I am not sure that that one exception can be regarded as a typical unequivocal case. It was a case of lithotomy in which a country gentleman of very florid habits and congested appearance had hæmorrhage on the day succeeding the operation. On the third day there came on terrible rigors, which were repeated day after day, until death took place on the fourteenth day. At the post-mortem examination, not a drop of pus was discovered in any part of the system; there was simply an enormous congestion of the visceral organs. The viscera, in the abdomen especially, were enormously enlarged, and there was a turgid spleen. That, I think, is the only case. Neither have I seen any case following from carbuncles or boils. In this way I have been led to think that one's private practice was perfectly secure and very much opposed to hospital practice. I have unwillingly and almost tremblingly proceeded to operate in the hospital, but I have had a happy confidence and a perfect assurance that in all private cases I should avoid any of these disastrous consequences. It fell upon me, therefore, with some surprise when I read your admirable address, quoting such a large body of evidence with regard to the occurrence of pyæmia in private practice, and I felt still more surprised when I heard one speaker after another—notably one eminent speaker—declare that pyæmia was, in his experience, just as frequent, and arose from just as trivial causes, in private as in hospital practice. Then came the other speakers who had similar experience to my own to quote, having had no decided case of pyæmia following operations in private practice, and those gentlemen were, as far as I could ascertain, practising in the same sphere as yourself, Sir James Paget, and others. How are we to reconcile these discordant records of experience? There can be no doubt, I apprehend, that the nature of the practice must be the same, and that the variety of cases must be very much the same, but that there must be some mode of coming to a conclusion, so as to make the one set of facts fit in with the other; and I can only explain it by supposing that there are some gentlemen—Mr. Erichsen to wit—who would hesitate to designate as pyæmia certain cases which you yourself have given as instances of that disease. That is the feeling I have at this moment, that in looking over the carefully recorded cases you have given us, there are some of them that would never enter into my mind to give as pure typical cases of pyæmia. Notably I refer to two or three cases of typhoid fever, which were succeeded by feverish symptoms during convalescence, and the development of abscesses in the limbs and in various parts—sometimes one, sometimes more—ending in recovery in all but one case. I admit I have seen cases of typhoid fever ending in development of abscesses during recovery; but certainly they differ as widely as cases can differ from those cases with which I have been so familiar in hospital practice. Therefore, if you will allow me, I will compare, in a few words, the records of the same number of cases in the hospital that I have a distinct recollection of as to their main facts with those you have given us in your admirable address. Taking the last twenty-one cases of pyæmia in the hospital, I find that they all died. Of your twenty-one cases nearly half, if not quite a half, recovered. Now, that is a striking contrast to begin with, and I think I shall have the assent of most surgeons

when I say that pure typical pyæmia is marvellously fatal. Probably I am within the mark when I say that, in the experience of most persons, 90 per cent. of the cases of pyæmia would be fatal, probably more. In your cases ten out of twenty-one seem to have recovered. If it be said that the hospital cases represent a malignant form of pyæmia, it may be so; but in answer to that I can quote Sir James Paget's remark that in his experience, which probably is London experience in the main, pyæmia was as fatal in private as in hospital practice. Then, again, in noting the pathological and anatomical facts of these twenty-one cases of hospital pyæmia, I have had post-mortem examinations in every instance, and I find that in twenty of them there were visceral abscesses, abscesses of the lung and the liver. Now in your twenty-one cases there could not have been abscesses of the lung and liver in quite half, because they recovered, and I should think in considerably more than half there probably were not any visceral abscesses whatever. There, again, is a considerable contrast in the anatomical facts. I notice also that all these twenty-one cases to which I have directed attention arose, with one doubtful exception, from operation or ulcer or some broken surface; but in six out of your twenty-one cases there was no wound, no operation, no sore, no broken surface whatever. Now I am quite ready to admit that pyæmia may occur without any broken surface. It is denied, I believe, by some authorities, but I think I have seen it, and I have no reason to doubt its existence; but, at the same time, most surgeons will agree that it is extremely rare. Six out of twenty-one cases seem to me to indicate a very marked excess of what I should have thought to be possible. I notice also that in the twenty-one cases I have taken a note of, pyæmia followed in at least fourteen cases from surgical operations—some slight, such as fistula, some heavy, as in the case of stone and amputations; but of your twenty-one cases I think there are only six cases of operation, and those of a slight and trivial character, so that I still feel a difficulty in bringing into harmony and unison such typical cases as I have reported and those twenty-one cases the notes of which you have been so good as to lay before the Society. If it be the case that private practice affords such a large body of evidence with regard to the occurrence of pyæmia, I scarcely know what inference to draw, except this—I may be pardoned for making it—that those people who are afflicted with wounds and stand in need of operation, will really do well, instead of flocking to London for its matchless surgery and superior advice, to remain and take advantage of the humbler attainments that they will meet with in the country, where they will exchange skill for greater safety. Still, I come to the conclusion in my own mind that pyæmia, if it does not find its birth-place, does find its natural home and resting-place in hospitals; and although a hospital may not be the mother of pyæmia, it is its nurse. Nevertheless, I cannot but express my gratitude to you for the bold and fearless way in which you have reported these most unwelcome cases, leaving us to think the matter over in every possible direction; and the direction of all others that it strikes me as most useful to think about is not so much the mere treatment of it as that which Mr. Callender has pointed out, and that which he has done so much to illustrate—namely, the prevention of this disease. It strikes me that in that direction we shall conquer this terrible pest and plague, and I, for one, shall not rest satisfied in our own locality until we have subdued in our Norfolk and Norwich Hospital this dreadful pest down to the low level and satisfactory condition that Mr. Callender so well describes as existing at St. Bartholomew's.

MR. ADAMS.—Amongst the interesting observations arising out of the valuable paper which you have communicated to this Society, it appears to me that the two of greater prominence are: first, the establishment of the fact of pyæmia occurring in private practice in a very much larger proportion of cases than hitherto has been supposed; and secondly, the facts which have been arrayed, especially by Mr. Erichsen and Mr. Callender, with regard to the prevention of pyæmia when it arises in hospital practice, for we now know that it is liable to occur both in private and in hospital practice—I will not say with equal, but with a more or less equal degree of certainty. With regard to the observations made as to the prevention of the spread of pyæmia, I think I should second the remarks made by Mr. Callender with some experience in a smaller hospital, the Great Northern. In large hospitals like St. Bartholomew's and the London—and my recollections go back to the old days of St. Thomas's—we know that operations were frequently almost suspended for a time during the prevalence of pyæmia in the wards. Surgeons almost refused to operate, or they operated only in cases of extreme emergency. Now it happened in the Great Northern Hospital, about two years and a half ago, that our surgical deaths reached 50 per cent. from pyæmia. This of course called for an inquiry. The staff and the committee were anxiously engaged in investigating all the circumstances connected with the nursing department, the ventilation, the cubic space, and so forth. After that time a change occurred, and a house-surgeon (Mr. Young) was elected from one of Mr. Callender's and Sir James Paget's house-surgeons, and he was therefore well instructed in the general principles that Mr. Callender has enunciated this evening. Our surgical deaths then rapidly diminished, and within the last year and a half, out of three hundred surgical cases, we have had only eighteen deaths, and not more than one—and that a doubtful case—of pyæmia. This result was considered to be due not only to the diminution of the number of beds in some of the wards and the increase of the cubic space for breathing, but also to the preventing of cases of severe accidents and large suppurating wounds accumulating in one ward, and especially to the care paid in dressing wounds within the period which Mr. Callender has specified after the accident. All sponges were abolished in the wards. They are used in the operating theatres, and they are only kept for operation cases. All materials are quickly removed from the wards. With these general directions our deaths have now declined; though, after what Mr. Cadge has said, we can hardly depend upon such sanitary arrangements being always attended with equally good results.

MR. DURHAM.—The subject of pyæmia is one of very great interest indeed, and one of very great importance; and if we wanted any evidence of the interest felt in this subject by all our London surgeons, I suppose we could scarcely find better evidence than that afforded by the number of large and well-attended meetings which have occurred for its discussion in consequence of your opening remarks. It is an interesting subject from whatever point of view considered; and that it may be considered from a great number of points of view is well illustrated by the remarks of the different speakers in connexion with the subject. I do not propose to enter for one moment upon its discussion from many of the points of view that have been already taken, but I venture rather to come back to the point from which you started—the question of pyæmia as occurring in private practice; for it does appear to me that this is a most important view of the case to take when considered in several ways; for at the present day we hospital surgeons are so accustomed to have thrown in our teeth the great horrors of hospitalism and the fatality that attends it, that it is a great matter of consolation to find men, our seniors, men of large experience like yourself and Sir James Paget, coming forward and telling us that you meet with such a number of cases of pyæmia in private practice, which some would make out to be especially a hospital disease. I have met with at least five undoubted cases of pyæmia in private practice, and in each case I venture to say it arose altogether without any such cause as some would suggest with regard to pyæmia occurring in the private practice of distinguished hospital surgeons. It has been said that if these surgeons get pyæmia in their private practice it is because they, their assistants, or their nurses have conveyed the poison to their patients. I stand here to protest against the truthfulness of any such view. There is a kind of practical addendum to that, which is that these hospital surgeons ought not to operate in private in such and such particular cases; and I wish again to protest against that view of the case, and speak in all seriousness. It has been distinctly said to me: "You hospital surgeons convey these diseases about; you hospital surgeons have no business to operate in such and such cases." Without entering into personalities in any kind of way, I may venture to say many gentlemen in this room will know quite well the line of direction my remarks take. Your cases, Sir, many of them, are certainly free altogether from the possibility of being clouded by any such imputation as that; and it so happens that the cases which have occurred under my own eye were also free from such imputation, for

I had nothing to do with them till the pyæmia had certainly been established. Of those five cases I should like to mention two: the first because of the manner in which the malady arose, and the second because of the extremely successful and satisfactory results which attended the treatment. The first case to which I refer was one that made a very great impression indeed upon me at the time, though it is many years since. A young gentleman, in the middle of his examination at the University of London, having got through the first week, was rather depressed on the Friday, and on the Saturday he was extremely ill. That night he had a severe rigor. On the Sunday he was still more ill, and I saw him. He was extremely ill, presenting all the symptoms of pyæmia: the duskiness of complexion, the dry, glazed, reddish tongue. He had effusion in one shoulder, and effusion in the knee on the opposite side, with the general mental trepidation, and so on. I recognised the serious condition of the young man, and called in my colleague, Dr. Wilks, the next day, who saw him with me. The effusion, which took place first in one knee and in the opposite shoulder, subsequently took place in the other knee, and then in or about the testicle, then in the calf of the other leg; and on the Wednesday following this young man died. It was not until after his death I learned, and then I had it on the strongest possible evidence, that he had, unfortunately, been suffering from an attack of gonorrhœa at the time. This I take to be a case of unmistakable, indisputable pyæmia, owing its origin to gonorrhœa. I mention the case because you referred to a similar case, at the same time observing, no doubt perfectly correctly, that such cases were very rare. The next case to which I would venture also to call attention as occurring in private practice was a case to which I was called by my friend Dr. Hunter, of Lavender-hill, Clapham. It was to see a lady, twenty-four years of age, who had always had very fair general health. She had aborted on the 19th of October, and had some hæmorrhage afterwards. The vagina was plugged and secale cornutum administered, and the hæmorrhage arrested. I need not trouble you with all the details of the case, but would merely say so far that the mother was extremely depressed by the fact of her other only child having a severe attack of scarlet fever, and this child had had the attack of scarlet fever while sleeping in the same room with the mother. The moment the malady was recognised the child was sent away. On the 28th of October—that is, eleven days after the abortion—the patient had rigors, and all the symptoms of pyæmia set in, accompanied with sleeplessness and so on. She continued in this state, and had renewed rigors until the 9th of November, and at that time fluctuation was discovered in the anterior part of the right thigh about the junction of the middle and lower third, also evidence of fluid in the left knee-joint. Under such circumstances a consultation was proposed, and I was called in. About the nature of the case there was no room for any doubt; as to its origin, that seemed to be pretty clear also; for that the woman was suffering from pyæmia was perfectly clear. I made a very free incision right through the muscles into the large abscess in the front of the thigh, and evacuated a considerable quantity of ill-formed pus. The femur was laid completely bare, and denuded of periosteum for three or four inches. I passed my finger up and down it. I then proceeded to tap the opposite knee-joint. I passed a trocar and canula into the knee-joint, and evacuated from that from four to six ounces of serum and some ill-formed flocky kind of pus—the kind of stuff we are in the habit of recognising in the joints in these conditions. The patient was very much relieved as the result, and she went on pretty well for some days. About a fortnight subsequently I was again called in, a fresh collection of fluid having taken place in the opposite leg, deep down amongst the muscles. I again made a free incision deep down, and found that the tibia was bare for the space again of two or three inches. That was the last time I saw the patient until she came to call upon me perfectly well, having entirely recovered; the place healed up, there was no exfoliation of bone, she moved her knee-joint perfectly freely, and in every respect was in good health. That is a very satisfactory and successful case, and I bring it forward as an illustration of the method of treatment. I believe the success of our proceedings was owing to the fact that we administered to her very large doses indeed of quinine. It has happened to me to have seen a great many cases of pyæmia in hospital practice; and of late years, whenever I have seen the slightest indication of the symptoms setting in, I have immediately given large doses of quinine; and in cases in which pyæmic symptoms have been well established, and which I have no doubt would have gone on to a fatal termination, I have also given large doses of quinine, and in some cases the most satisfactory results have been obtained. I have seen, over and over again, a patient with a dry, red, glazed, brown, furred tongue, with a rapid pulse, high temperature, having had a rigor a short time previously, with evidences of suppuration occurring in one part or another; I have in such a case given half a drachm of quinine, and repeated it in three or four hours; and on the next day I have seen the patient in a totally different condition—the temperature down, the pulse lower, the tongue clean and moist, and the patient expressing himself as well. I beg respectfully to recommend this kind of treatment to the members of the Society: large doses three or four times a day regularly, and whenever there is a prospect of a rigor coming on. If the patient cannot take it, it may be given subcutaneously. The most striking case I have seen of the beneficial effect of this treatment was a case in which the quinine was administered subcutaneously.

Dr. A. P. STEWART.—I must beg the pardon of the Society if, at the fag end of what appears to be an essentially surgical debate, I should rise to protest that pyæmia, so far as my experience goes, is by no means essentially a surgical disease, and that it is by no means necessarily connected with, as has been stated in the course of this discussion, open wounds. I can look back nearly forty years when I was resident in the Fever Hospital at Glasgow at a time of extreme prevalence of epidemic typhus, with very limited accommodation for the multitude of patients that presented themselves, during which time the wards were exceedingly overcrowded, and at that time, and for the period of perhaps four or five months, pyæmia in its essential characteristics was exceedingly prevalent without a single open wound existing among those affected by it—that is to say, as a sequela of typhus. About the crisis, or rather after the crisis, intense rigors came on with dusky and even jaundiced skin, extreme rapidity of pulse, glazed tongue, and painful joints. Finally, most of the joints of the body were proved, in almost every case, upon post-mortem examination, to be filled with pus, not only the larger but the smaller joints, and there were visceral abscesses—that is to say, purulent deposits in the lungs. This occurred not in one or two cases, but in a multitude of cases without a single wound having been present in any one of these patients; added to which, in a considerable number of them, there was inflammation of the veins to a very large extent, with large swellings of the limbs. Now this, I think, no one would deny was essentially pyæmia. The two conditions were an intensely infectious, contagious, malignant disease, and great overcrowding, such as has been stated by Mr. Cadge to have been present in the Norfolk and Norwich Hospital; and I believe that wherever you have these same conditions you will have the same results. I call particular attention to the remarks made by my late colleague, Mr. De Morgan, on a former evening of this discussion, which, as it appeared to me, needlessly recalled a case that had been repeated *usque ad nauseam* as occurring in the Middlesex Hospital, in which, from bad air in a particular portion of a ward, there were continual cases of pyæmia occurring. On the removal of that condition the pyæmia ceased, and did not return for a series of years till the same condition occurred again from neglect, and pyæmia recurred. On paying attention to that condition once more pyæmia ceased. I believe it does lead us back to the question whether this condition of things does not arise mainly from bad air in some form or another, overcrowding, the presence of malignant disease, the presence of blood-poisoning in some shape or other, not necessarily from surgical operations or from the presence originally of pus in the system, but blood-poisoning such as occurred in those cases of typhus which I mentioned, the presence of a blood disease leading to this particular form and development which proved fatal to so large a number of cases of typhus in the Glasgow Fever Hospital. I believe you will find it to be so wherever there are the same or analogous conditions.

On the motion of Mr. JONATHAN HUTCHINSON, the debate was again adjourned till the next meeting.

THE LANCET.

LONDON: SATURDAY, MARCH 7, 1874.

OUR readers will remember that a few months ago there were many meetings in Manchester for the purpose of organising on a large scale a system of Provident Dispensaries. There was much difference of opinion; but in the end a sub-committee was appointed in August last to prepare a scheme for the establishment of Provident Sick Societies likely to be acceptable to the two parties affected by such schemes—viz., the working classes and the medical profession. For months it looked very much as if this sub-committee had gone to sleep; but in January it gave signs of life, and produced a scheme which has been adopted by the full Committee which had appointed the sub-committee, and which is understood to be representative of the public, the profession, and the medical charities. The scheme still awaits, we presume, discussion by the managers of these charities. But, as it is so far approved by their representatives, we may expect that it will be adopted and put upon its trial.

To a considerable extent the scheme of the Medico-Ethical Association, of which an outline has appeared in our columns, is adhered to. In the first place, it is proposed to divide Manchester and Salford into districts; in each of which a dispensary shall be located. These districts will be sufficiently small to bring the dispensary within easy reach of the homes of the members; and we believe it was felt by the Committee that, generally speaking, a population of 30,000 will be sufficient in each. It is also a rule that the medical officers and members must attach themselves to the dispensary of the district in which they reside. Each dispensary is to be managed by its own committee, consisting of an equal number of honorary members, ordinary members, and medical officers. Next, it is proposed that the various dispensaries should be affiliated to each other through a Council, to which they shall each send two representatives. This Council, moreover, is to serve the important part of being a connecting link between the dispensaries and the present charities. It is proposed that each charity which signifies its adhesion to the scheme (in the manner to be stated presently) should also send two representatives to the Council; and that thus a federation should be formed of the medical charities and provident dispensaries. Next, it is to be observed, that it is proposed "that no medical charity shall receive as an out or home patient any person residing in a district in which a provident dispensary has been established, except upon the recommendation of such dispensary." This rule, it is obvious, deals at once a serious blow at the present system of charity of which so much has of late been heard. For, on the one hand, the in-patient department is not interfered with; and, on the other, if a person be unable to afford the payments required by the dispensaries, he knows where a "recommend" can be procured, whilst also the managers of the charities may rest assured that their charity is being bestowed only on deserving cases. At first difficulties will of course occur; but it is believed that, unless some such regulation be made, the provident system could never cope satisfactorily with the open doors of the charities.

The Committee commence their report by stating their "decided opinion that provident dispensaries ought ultimately to be self-supporting; but, after careful consideration, have come to the conclusion that, until these become generally known and accepted by the working classes, it will be necessary to include honorary as well as ordinary members in their constitution." We believe that considerable difference of opinion has prevailed regarding the question of honorary members; many being of opinion that the initial expenses might be defrayed by donations. We do not think, however, that fault can be found with the determination arrived at by the Committee. Oddly enough, however, another paragraph contemplates the creation of life honorary members—a step which is quite inconsistent with the opinion expressed above. Ordinary members are to be those whose average earnings do not exceed 30s. a week; and the payment is to be 1d. per week—children under thirteen, over two in number in a family, not being charged for. Of these payments only half is to go to the medical man; and the other half, together with the contributions of honorary members, is to be appropriated for expenses; two-thirds of any surplus after this reverting to the medical men.

Rule 5 throws open the dispensaries to every medical man who chooses to join the staff.

It will be seen at once that this is not a question of an experiment by an individual dispensary, but a huge experiment involving the whole or the greater part of the charities of Manchester. The scheme is so large and bold, and withal original, as to make criticism difficult. The medical charities that fall into the scheme are to be controlled by the provident dispensaries. No medical charity is to receive an out or home patient in a district in which a provident dispensary has been established, except on the recommendation of such dispensary; cases of urgency of course excepted. Much responsibility and much labour are thus imposed on the provident dispensaries. On the other hand, if all the medical charities fall into the scheme, while their occupation will be wellnigh gone, the provident dispensaries will have an unexampled field before them. In no other instance yet have the medical charities felt bound to put themselves into the hands of the provident dispensaries.

Other features of the scheme seem to us very open to remark. The finance department is complicated. The subscriptions of honorary members are to be paid to the Council, to be distributed among the dispensaries according to their need. Expenses of management are to be paid out of one-half of the payments of ordinary members and the subscriptions of honorary members. The other half of the payments of ordinary members is to go to the medical officers; and any surplus from the honorary subscriptions after payment of expenses is to go to the medical officers. All this is very complicated, and the medical officers must feel very uncertain as to what their receipts will be. It would seem much better to have reserved the subscriptions of ordinary

members of each dispensary for its own medical men in proportion to the work they do, and to have used honorary subscriptions for expenses of management and drugs. Medical men receive little enough under the ordinary arrangements of provident dispensaries; but they will receive less, we fear, under this arrangement; moreover, it does not seem desirable to make them receivers of honorary subscriptions.

Another feature of the scheme is the admission of every qualified medical man. This course has its advantages and disadvantages, and probably the latter preponderate. If the staff of a dispensary is too large, the number of patients falling to the care of each is either too small to maintain interest, or the number is so unequal as to excite jealousies and discord. It may be that the very largeness of the Manchester scheme may counteract these disadvantages; and we shall look at the progress of the experiment with much interest, though with some misgivings.

THE question of recruiting is one that does not seem to admit of easy solution. It is constantly cropping up for consideration; and recent expedients, by all accounts, have not been very successful in getting recruits of the right stamp, nor, it must be added, in keeping them when obtained. We adverted last week to Surgeon-Major ADAMS's capital lecture at the Royal United Service Institution in connexion with this subject, which, apart from its national importance, possesses several points of interest. After all, the chief end in view with the governing and governed classes is, speaking roughly, for the former to get all they can out of the latter, who are equally bent on giving as little as they can. Of course, when something occurs which really touches the national sentiment, there is no lack of self-sacrifice, and money is always forthcoming; but under ordinary circumstances it is not so. The political shibboleth of the day is retrenchment, let us say; and the army and navy obviously present the directions in which this may most easily be effected. Various experiments are tentatively adopted from time to time; but the classes from which recruits are obtained are not slow in discovering the relative value of the new and old terms proffered them, and the experiments often resemble those of a popular chemical lecturer in a country town—they "don't go off" as they should. Putting aside, however, in the meantime, the political and financial aspects of recruiting, let us turn to some of its medical or physiological aspects. The most dismal view is that which associates the physical degeneracy of the soldier with a general falling off in the strength and stamina of the population. Dr. ADAMS tells us that the numbers and *quality* of our recruits have been steadily declining of late years, and more so since the introduction of short service. The old *régime*, he tells us, had its faults and weak points; but the stratum of citizenship on which the recruiting sergeant practised was superior, morally and physically, to that from which the majority of recruits are now obtained. Indeed, ever since the Crimean war, there has, he considers, been a steady decline in the supply and the physical capabilities of the men enlisted. After passing in review the causes which have tended to bring about this result—such as the increase of our military forces, our social changes, the increase in wages and emigration, the growing indisposition of the Britisher to sacrifice his inherited freedom for the irksome restraint of military life, and the fact that, although we are a warlike, we are essentially a non-military, people,—Dr. ADAMS proceeds to discuss several points connected with the existing requirements as to the age, stature, and bulk of our recruits. Judging from what one knows of the physical powers of the Anglo-Saxon, he apprehends that our minimum military standard of height, although apparently good as compared with that of either France or Germany, is on the border line of the physical efficiency of our people. England employs the youngest, and France the shortest, men in warfare. In regard, however, to the stature of various nations, and what anthropologists designate race characters, there are pronounced differences in physique as well as in relative powers of endurance. For instance, a people of low stature may be as physically fit for an army as a larger stock, there being differences in the relative capacities of the chest and other organs in various nations. The Tartars of Thibet are a race of very low stature, yet they have proportionally very large chests. A distinguished Frenchman, again, tells us that, if we draw a line passing by Cherbourg and Nice, we shall divide France into two distinct zones as regards appearance and height of the inhabitants. In the south-west the ancient Celtic population is of small height, as is proved by the great number of military exemptions. Dr. ADAMS, notwithstanding the Celtic character, holds that a stature of 5 ft., with even a fair proportion as regards weight and chest measurement, at twenty years of age, would be a very low standard for military efficiency for our race. The question of the stature of men depends, therefore, on the characters natural to a people; but the enervating influences of city life, combined with the drain on its youth through the requirements of warfare and emigration, must tend to a deterioration of the race as regards physique. It may yet become a State question how the flow of Ireland's able-bodied youth to America can be checked. A low stature for the soldiers of France, as compared with other countries, may be a measure of good policy and of necessity, considering the drain made by warfare on her population during the last seventy or eighty years; but, looking to the physical capabilities of the Anglo-Saxon, Dr. ADAMS considers it probable that a standard under 64 in. in height would bring very few recruits of the minimum age, or even up to twenty-one, of sufficient muscular development. From all the data in his possession he has come to the conclusion that 3 in. is a fair allowance for growth between seventeen and twenty-six years of age; and he contends that a properly nourished recruit of seventeen or eighteen should be from 64 in. to 65 in. in height, and at least 130 lb. in weight. In many very material respects, as regards his dietary, barrack-room, creature-comforts, and health-requirements, the English soldier is in advance of the soldier of every other country. Of the evils of over-work on the young soldier there cannot be two opinions; and Dr. ADAMS had much that was both wise and practical to say on this subject, as well as upon that which was the primary object of the lecture—viz., the alterations and amendments required in our recruiting system.

WHETHER the time will ever come or not when the suggestion made by *The Times* the other day, that the Reports of the Registrar-General will be raised to a level in the eyes of the public with the revenue returns and other statistics of imperial finance, will be realised, there can be no doubt that their popular importance will increase as the public health becomes more and more a matter of general concern. It is but a few years since these Reports were known and treasured only by the comparatively small circle of professional men and laymen who then took active interest in vital statistics from a medical or a sanitary point of view; now to the public at large they are becoming "familiar in their mouths as household words." Ten years ago it was the exception to find a leading metropolitan or provincial journal publishing extracts from or comments upon the Registration Returns; now many of the chief newspapers in town and country print the Weekly and Quarterly Returns entire, besides frequently making their leading characteristics the theme of editorial discussion. Only those who have steadily watched these signs of the growth of interest in a subject not in itself attractive, nor, in the estimation of some critics, always made as much so as it might have been, can appreciate the remarkable change that has thus been wrought through the influence of the press. By whatever means thereto moved, it is creditable to the press of this country that its directors should have so fully recognised the importance of the Registration Returns in relation to the public health, as is evidenced by the large amount of valuable space now devoted to them. Gradually the people are being educated in this wise to the perception that a waste of human life is the most extravagant and indefensible kind of waste, that such a waste is going on in England day by day and year by year, and that it can only be stopped by the adoption of measures which at the outset, though often entailing considerable expense and inconvenience, always in the long-run yield a good return.

The Registrar-General's Returns have two distinct characteristics which ought always to be borne in mind. They are records of indisputable facts, in so far as they deal with the numbers of marriages, births, and deaths *registered* in a given time amongst all classes of the population throughout the country; and in this aspect their value, when taken in conjunction with the periodical census returns, as illustrating the social condition of the people, is indisputable. So much the more reason, therefore, have we for urging that, whatever means are practicable for remedying defects in the original Act whereby a proportion, however small, of births and deaths escape registration, should be taken without longer delay. For the last two or three sessions, Bills for making the registration of all births compulsory, and for otherwise improving the law of registration of deaths as well as births, have been laid before Parliament only to find their way into the legislative waste-paper basket. Let us hope that there will be better luck this year, and that amongst the measures of domestic legislation which the country may reasonably anticipate from Mr. DISRAELI's Government an amended Registration Act will have an early place.

But we have said that the Registrar-General's Returns have a dual significance: they are not merely a record of absolute facts, but to a large and increasing extent they embody deductions, arrived at by the application of the most scientific methods of statistical analysis, which involve considerations of the widest magnitude in relation to the great question of public health, to pathological research, to life insurance—in short, to the most vital interests of the nation. Obviously the value of any such deductions will depend primarily upon the accuracy and range of the fact bases, and in an important degree upon the sufficiency of the analytical machinery both as to quality and quantity. Those who have made trial of statistical research will understand something of what upon a large scale, such as is implied in dealing with over twenty-two millions of people, must be the amount of clerical labour as well as of directing power, involved in keeping abreast of what the public is fast getting accustomed to look for in the Registration Returns.

In point of fact, indeed, it is the opinion of not a few competent observers that only the upper levels of the mine of our national vital statistics have as yet been worked; and that we have now arrived at a stage when, for the better understanding of many health problems, a deeper penetration is necessary. The mortality among the various classes of the population, the relation between occupation and mortality, are points yet to be satisfactorily determined on a comprehensive scale; and for such purpose the Registration and Census Returns contain invaluable material.

The Registrar-General's Office has, or ought to have, a great future before it; and all who with us are convinced of its public usefulness will share our hope that the cold parsimonious wave which is so generally understood to have lately swept over the Civil Service has not blighted with its effects a department whose legitimate influence has increased, is increasing, and certainly ought not to be diminished.

To say that the great trial which has just been brought to a close offers much food for reflection, is but an obvious truism; but to attempt to say anything upon the matter which has not been said by others hundreds of times in the past six months seems to us almost hopeless. Six months since many thoughtful and respectable persons—we do not go so far as some of our contemporaries and say "half England," nor do we take into account the opinions (so-called) of the rabble who would echo the utterances of any windy orator who could rouse their giddy passions—regarded it as quite possible that the hulking scoundrel, who now, thank goodness, has at last got his deserts, would turn out to be the man he strove to represent himself. At the present time the Lord Chief Justice is undoubtedly right when he says that none but "fools and fanatics" could have any doubt that they have been the dupes of an imposture as crude as it was daring. The person who is solely answerable for the waste of the enormous sums of money entailed by this prolonged litigation, and for the cruel suspense in which an old and noble family has been kept, is undoubtedly the poor foolish woman who allowed her common sense, if she had any, to be blinded by her headstrong impulses. If the

Dowager Lady Tichborne was able to recognise in the huge vulgarian who imposed upon her the slim boy who left her fourteen years before, then it was not to be wondered at that others, who believed doubtless in the infallibility of maternal instinct, should feel that to doubt his identity was not only absurd, but almost wicked. The "instincts" of Lady Tichborne are comparable to those of the unhappy hen who has been induced by cruel impostors to sit upon a duck's egg; and one is thankful that she, poor thing, has escaped the awful misery which the upshot of the trial must have brought upon her.

The impossibility of deciding questions of personal identity on anatomical grounds has never been before so strongly shown. In spite of what the Lord Chief Justice said, there can be little doubt that "Bullocky Orton" and the slim effeminate officer whom he sought to personate had few, if any, points in common; but so many witnesses were found ready to swear that each of them had or had not such and such peculiarities that evidence of this kind was worse than valueless, and served to confound rather than to elucidate the question. The medical evidence, especially that for the defence, was, to say the least of it, weak; and, to use a phrase employed in the summing-up, we see no reason to stand between Sir Wm. Fergusson and the remark which fell from the Bench as to "Caledonian caution." Of the phrenologist who preferred the sense of touch to that of sight, and who could feel scars which the closest observation with the eyes could not detect, we need say nothing.

The Lord Chief Justice made a very great point in his charge to the jury when he directed their attention to the fact that, although two persons might physically be

> "the one so like the other
> As could not be distinguished but by name,"

yet that no two persons ever were alike "within." The ease with which the jury came to their decision, and the utter absence of doubt left upon the public mind, are solely due to the masterly way in which the Lord Chief Justice, by the aid almost entirely of documentary evidence, gave the jury a complete insight into the mind and character of Roger Tichborne. Roger Tichborne, as graphically and incontrovertibly delineated by the Judge's master-mind, became in the minds of the jury and the public a living entity—a thinking, feeling, self-reliant gentleman, and not merely a lay figure with or without a certain number of pock marks, brown marks, issue marks, and "idiosyncrasies" to or against which any number of witnesses were ready to swear, and which it was evident might, within certain limits, be obliterated or produced by artifice and cunning. The living Roger Tichborne, as reproduced by the Judge, had but to be compared with the Claimant to render the imposture evident. Any doubts which may have remained in the minds of thinking men began to be dispelled as soon as the learned counsel for the defence commenced his second address to the jury. It was evident that a line of action so damaging to his client's cause could arise only from despair of finding logical arguments.

We are glad to have done with this unwieldy trial, which certainly did little credit to our judicial system; and we are heartily content to leave Arthur Orton to his "skilly" and reflections.

Medical Annotations.

"Ne quid nimis."

THE DEBATE ON PYÆMIA.

Our readers cannot fail to perceive that the discussion which Mr. Prescott Hewett's paper has elicited was sustained with unabated vigour and ability at the last meeting of the Clinical Society. It was opened by Mr. Callender, whose remarks, founded as they were on the results of his own observations and a very successful surgical experience, were listened to by a very full meeting with all the attention they deserved. We were extremely glad, moreover, to find that the discussion had entered into what we consider the right groove, and that it was eminently practical and clinical in character. There is all the difference in the world between one who speaks because he has something to say and one who speaks because he wishes to say something. Mr. Callender began by clearing away much of the confusion arising out of the tangle into which the subject was getting, by classifying the different forms and varieties of affection embraced by the term pyæmia, and wound up by showing what could be accomplished by the exercise of care, common sense, and skill, when based upon sound guiding principles of surgery and hygiene. Good as was Mr. Callender, we still think that Mr. Cadge bore off the honours of the evening, and his speech makes us regret extremely the relative infrequency with which our metropolitan medical societies are honoured by the presence of leading provincial surgeons. Brushing away the cobwebs of abstruse pathological considerations, which could only tend to obscure the view of the subject from a debating standpoint, Mr. Cadge circumscribed his observations within limits that served to focus the light he had to throw on the points raised by the President's paper. Our readers will peruse the report of the debate for themselves, and it would be premature and impertinent for us to discuss it more fully now, than by stating that Mr. Cadge subjected Mr. Prescott Hewett's cases of pyæmia in private practice to a very searching analysis and comparison with a similar number of public cases under his care, as surgeon of the Norfolk and Norwich Hospital, and the results of his own experience of surgical cases in private practice. We are somewhat surprised that none of the speakers touched on the connexion of osteo-myelitis with pyæmia. Dr. A. P. Stewart's observations likewise tended to the elucidation of the subject from the physician's point of view, by showing that constitutional states of system, induced by overcrowding and other conditions, may be most influential in developing pyæmia, irrespective of infection through open wounds. It seems clear to us that the view we have always maintained has not yet been successfully assailed—viz., that many allied but different affections, possessing similar clinical characters and a similar, but by no means the same, pathology, have been classed together, and that conditions which may for the nonce be embraced by the term "hospitalism" occupy an important position among the factors in the development, if not the origin, of that scourge of surgery—pyæmia.

The debate was adjourned until the next meeting.

CREMATION.

The subject of cremation is again taken up by Sir Henry Thompson in the pages of the *Contemporary Review*. In this article he replies to various criticisms that have appeared in different journals, and gives a detailed account of the process he would suggest as most appropriate for the object in view. Sir Henry states, and it is certainly a some-

what remarkable fact, that the only formal opposition to cremation has been made by the present medical Inspector of Burials for England and Wales, Mr. Holland; and in reply to the observations of this gentleman, Sir Henry refers to the evidence obtained by Drs. Southwood Smith, Waller Lewis, and others, in regard to the large amount of gases produced in the decomposition of the body, and the impregnation of soil, water, and air to a considerable distance. Such impregnation by the dead, and consequent danger to the living, cannot, we presume, be questioned for a moment, and is fully borne out by the statements of Mr. Bowie and the general experience of the profession. We must also fully endorse Sir Henry's remarks in regard to the elimination of ammonia, or at least of carbonate of ammonia, from decomposing animal tissues, and are at a loss to understand how any doubt can exist about the point. Turning to the second part of Sir Henry Thompson's essay, he remarks that he has personally superintended the burning of three bodies of animals, one weighing 47 lb., another 140 lb., and a third no less than 227 lb., with the most satisfactory results, the residue in the first instance weighing only 1¾ lb., and in the second 4 lb. In the last case the body was placed in one of Dr. Siemen's furnaces, the interior of which was heated to about 2000° F. The inner surface of the cylinder, which was about 7 ft. long by 5 or 6 ft. in diameter, was smooth, almost polished, and no solid matter but that of the body was introduced into it. The gases, which were at first abundantly given off, passed through a highly-heated chamber, among thousands of interstices made by intersecting firebricks laid throughout the entire chamber lattice fashion, in order to minutely divide and delay the current, and to expose it to an immense area of heated surface. By this means they were rapidly oxidised, and not a particle of smoke issued by the chimney. No second furnace was therefore in this instance requisite, though, under certain circumstances, the products of combustion might be transmitted through another, and the fumes from this into a third, and so on, each being made available for the combustion of one body. The process was completed in fifty-five minutes, and the ashes, which weighed about 5 lb., were removed with ease. Sir Henry meets the objection that has been raised to the practice of cremation, that it will lead to an increase of crimes of poisoning, by suggesting that a public verificator of the cause might be appointed, whose duty it should be to ascertain and certify the cause of death, whilst the stomach might be kept for some years. In reference to the expense, he still thinks it would be far within the present cost of a funeral. As regards ourselves, we have already expressed our opinion that it is an eminently satisfactory mode of disposing of the dead—safe, speedy, wholesome, and economical; but we rather doubt whether ancient custom and popular prejudice can be so easily overcome and altered as Sir Henry Thompson appears to believe.

MR. GATHORNE HARDY AT THE WAR OFFICE.

ONE of the first things which the new Minister for War will have to consider is the present state of the Army Medical Department. As matters stand at present, much uncertainty and dissatisfaction exist, and the administration of the service must be a very difficult task for all concerned. It is ridiculous to suppose that Mr. Cardwell embodied all the original intentions of the new organisation scheme in his late Army Medical Warrant; indeed, he plainly intimated as much in his reply to the deputation of the British Medical Association, when he stated that the various subjects of complaint had already been brought to his notice by the Director-General of the Army Medical Service. The department is at present organised on neither a regimental nor a general staff basis. Medical officers have been induced to forward memorials to the late War Minister, assurances of some sort have been given, and hopes are entertained which are scarcely likely to be realised. Meanwhile the public service must be carried on, and every medical officer will consider himself aggrieved on finding that the course of duty, like the course of true love, does not run smooth, and that the previously expressed intentions of the authorities are at variance with the orders subsequently issued to him. The organisation of the medical, as of every other branch of the service, should be placed upon a clear and well-defined basis. Every medical officer should know his position and duties. The late warrant is just that sort of compromise which, instead of conciliating men of different views, worries and harasses them. We feel quite assured that if the late War Minister had confined himself to reorganising the medical service in a plain and unmistakable way, and left existing rights intact, he would have secured all the advantages of an efficient organisation, with little or none of the irritation and discontent that his measure has aroused. It surely would have been a simpler method of procedure to have laid down some specific date as that on which the new organisation was to come into general operation, confining its immediate incidence to those entering the department in the meantime. In a few years the service would, so to speak, have "unified" itself, and time would have been granted to the present incumbents of regimental appointments to vacate them or to have become reconciled to the new *régime*. What with Horse Guards' opposition, the unknown measure of opposition of War Office subordinates, the desire to reap an immediate harvest from every economising measure, and the dependent position which the War Minister for the time being occupies among officials who have mastered the details, the medical director of a relatively small and little influential service, however energetic and honest, has but a feeble chance of success. Mr. Cardwell has departed from the War Office for the Upper House, and it is well known that the sands of the present Director-General's official hour-glass are fast running out; but we believe that neither the one nor the other, and certainly not the latter, was the free agent that medical officers imagine. Mr. Gathorne Hardy has now the opportunity of learning where his predecessor's measure has failed, and the profession looks to him for the remedy.

THE ADMISSION OF WOMEN TO THE OBSTETRICAL SOCIETY.

A REPORT of the discussion on this important question will be found in another column. The question took the simple form of one of interpretation of the bye-laws; and only four gentlemen out of a very large meeting were found to vote in favour of the view that the bye-laws permitted the nomination of women. The great bulk of the Society voted in favour of the motion of Dr. Gustavus Murray that the laws of the Society do not admit of the nomination of female practitioners. Even Dr. Graily Hewitt, who had signed the nomination paper of Mrs. Garrett-Anderson, maintained that the founders of the Society did not contemplate the admission of women. The fundamental bye-law says that all registered practitioners are eligible; but subsequent paragraphs read as if only persons of the male sex were contemplated. It was argued that principles of legal and grammatical construction would permit of a generous inclusion of the "other sex of man"; but the Society was not to be influenced by any refined principles of construction, and by an overwhelming vote, given with very decided heartiness, rejected the larger interpretation. It was very sensibly

put by one or two speakers that, whatever the personal qualities of Mrs. Garrett-Anderson, the admission of women, as a rule, would be ruinous to the Society. It is idle to argue against a feeling so strong and so general; and the Society made short work of it, and decided that, however pleasant it is to meet ladies elsewhere, it would prefer their absence at the Obstetrical Society. Considering that there is only one lady admissible by virtue of her registration, it does seem unreasonable to ask a large Society to forego its very strong feelings on the general question.

The fact is that this question should never have been raised. The gentlemen who signed the nomination-paper of Mrs. Garrett-Anderson cannot be congratulated either on their own action in this matter or on the position in which they have placed either the Society or Mrs. Anderson. These gentlemen were among the very founders of the Society, and should better have known the feelings of its members. Had they considered these they would never have taken a course which has imposed on the Society a most ungracious duty.

DERBY AMALGAMATED FRIENDLY SOCIETIES' MEDICAL ASSOCIATION.

WE have been courteously favoured with the first annual report of the Derby Amalgamated Friendly Societies' Medical Association, which has been in existence a little more than twelve months. This association, like kindred ones, apparently originated in the unwillingness of the friendly societies of Derby to comply with a very reasonable request from their medical officers for an increased remuneration for their services. Working men should not have refused this. They know what work is, and how underpaid medical club work has hitherto been. Nevertheless they were resolved not to pay more, and to club together to get one man to attend all the friendly societies, and the wives and children of as many as pleased to make them members of the association. The report before us gives us the result. There are on the books of the Friendly Societies' Medical Association thirty-nine societies, with 3568 members; two juvenile societies, with 141 members; 13 members belong to societies out of the borough; wives and families of members to the extent of 1170; making a total of 4892 persons. This large number of persons has been attended, and payment of the whole machinery, including premises, of the scheme has been met by a total expenditure of £795. The resident medical superintendent's salary for one year and three weeks is £211 11s., plus £18 9s. for midwifery and vaccination fees; the surgeon's salary for four months is £43 6s. 8d.; the dispenser's for eleven months £47 13s. 4d.; giving a total of £321. The drugs cost £156 0s. 0½d. As everybody concerned in the experiment seems satisfied with it, it is not perhaps a case for much criticism. Moreover, as far as we know, the resident surgeon, Mr. Hutcheon, seems anxious to conduct the association in a professional and courteous spirit, and these are times in which all sorts of experiments must be tried to procure what is of immense moment—good medical attendance to those who can only have it by a system of association. Still we must make one or two remarks. Although the members protest that this experiment did not originate in a purpose of false economy, it certainly arose out of a demand, very reasonable on the part of the doctors of clubs, for a higher rate of remuneration. Secondly, the doctor seems to us, in this arrangement, disgracefully underpaid. If he himself consents to it that is no reason why we should approve of it. He has a right to sell his own services at what he thinks their value, but we must not admit that the attendance on 6000 cases, including thirty-three midwifery cases, can be considered to be paid for by a sum of £273. To remunerate medical work at such a rate is to act on a rule which working men would not like to be applied to themselves. A longer experience may show that such a system is not satisfactory, as it does not seem to us just. And it may teach Mr. Hutcheon that medical services are worth more than he at present thinks his own worth.

THE GOLD COAST.

NEWS is somewhat anxiously awaited from Sir Garnet Wolesley. We do not, however, share in the forebodings or indulge in the sinister prophecies that one hears, considering that the force which could effect a systematic advance on Coomassie, in the teeth of the obstacles that beset it, may be trusted to make its way back again. If the Europeans had to traverse a long line of country altogether devoid of small redoubts or posts, fortified and garrisoned at intervals between Coomassie and Prahsuh, there might, indeed, be some cause for misgiving; but such is not the case. There are no less than nine such small redoubts on the other side of the Prah, each of which is capable, at the worst, of being held for a sufficient period to allow of any force from Cape Coast coming to the relief of its garrison. There are many ways of accounting for this interval of silence; but we shall soon obtain information, and conjectures are futile. Meanwhile, we may trust the General in command to be no more "surprised" whilst retiring than he was in advancing. As soon as the news of the fall of Coomassie reached Cape Coast Castle, we learn from that station that steps were taken to invalid as many of the sick as practicable, in order to have a large amount of space available on board the *Victor Emanuel* for the accommodation of the sick and wounded arriving from the front. The hospital deck is large and airy, there is an abundant supply of ice and everything else on board, and the motion of the vessel is but slight; consequently she is eminently popular as a hospital ship. Although the present strength of the army hospital corps on the Gold Coast is believed to be adequate for the requirements of the sick, the Director-General of the Army Medical Service has recommended the despatch of an additional hundred men of that corps in a steam transport, now starting direct for the Coast. The men of the 23rd Regiment are said to have become depressed in health, owing to disappointment, confinement, loss of exercise on shipboard—where they were somewhat overcrowded,—and the monotonous diet. One portion of the corps, with very manifest improvement, were sent for a cruise to St. Vincent. It is rumoured, with what degree of accuracy we know not, that, at the fight of Amoaful, a body of Ashantees managed, by a flank movement, to make a raid, which was not altogether unsuccessful, upon a field hospital and baggage. According to the latest intelligence received by us, it would appear that there is a good deal of temporary inefficiency from sickness, but the mortality has hitherto been relatively very slight.

THE STOCKWELL FEVER AND SMALL-POX HOSPITALS.

THE Committee of Management of these hospitals have just presented to the Asylums Board their third annual report, which consists mainly of statistical and other particulars very ably compiled by the medical superintendents of the respective establishments, Dr. C. M'Cann and Dr. P. H. M'Kellar. The report of the former officer shows that whereas during the first year 2228 cases of small-pox were admitted, 632 were received in 1872, and of 81 admitted during the year under consideration, 64 only were suffering from small-pox, the other cases being measles, varicella, or some variety of cutaneous disease. Of the

total number of admissions for small-pox during the past year, 40·6 per cent. were unvaccinated, 40·6 were badly vaccinated, and 18·7 were "moderately protected." Illustrative and carefully arranged tables are given, and the evidence adduced by Dr. M'Cann of course goes to prove the urgent necessity that exists for the furtherance of all possible means to promote systematic vaccination. A total of 502 cases were received into the Fever Hospital, comprising 226 of typhus, 132 of enteric, 46 of scarlet fever, and 98 of "miscellaneous non-epidemic diseases." Of the cases of typhus, 24·7 per cent. died; of the 132 cases of enteric, 18·1 per cent. died; and of the 46 cases of scarlet, 4·3 were fatal. The 98 cases of "miscellaneous" diseases which found their way into the Fever Hospital are thus epitomised for the benefit of diagnostic science: febricula, 33; pneumonia, 27; ague, 6; erysipelas and phthisis, each 4; congested lungs, 3; dyspepsia, peritonitis, debility, and bronchitis, each 2; inflammation of glands, diarrhœa, disease of kidney, jaundice, pleurisy, rheumatism, septicæmia, suppression of urine, congenital syphilis, and tonsillitis, each 1 case. It appears to us that "febricula" is a somewhat unsatisfactory though authorised classification, and Dr. M'Kellar might usefully supplement his report by a detailed account of this large proportion of the miscellaneous cases that have come under his notice. Eight of the officials—viz., the chaplain, the matron, and six nurses—were attacked with enteric fever during the year, and one nurse with both typhus and enteric at different times.

WHAT NEXT?

IT is rumoured that it has been gravely proposed to the authorities of the India House to anticipate the advent of an outbreak of relapsing fever in connexion with the existing Indian famine, by sending out some one or more medical men from this country to act as a kind of special commission to inquire into the nature and causes of this disease, and to undertake an investigation generally into the fevers of India. We could only characterise this as a very puerile and unnecessary proceeding at any time; but it is downright blamable, under existing circumstances, to divert one penny from the funds so urgently needed for the relief of our famine-stricken fellow-subjects in India. The nature, causes, and symptoms of relapsing or famine fever have been studied and described again and again, by several of the ablest medical authorities in Europe and India itself, and we can scarcely believe that so clear-headed and well-informed a man as Lord Salisbury can meditate sending anyone from this country to India to report officially on a well-known disease before it has made its appearance, especially when there already exist in that country two large medical services, with numerous officials skilled in sanitary science, and a few scientific experts of the highest reputation, all of whose services are at the immediate disposal of the Indian Government. The home authorities could scarcely stultify themselves by sending "coals to Newcastle" after this fashion, to say nothing of the indignity to which they would be so heedlessly and needlessly subjecting a very large body of medical men, distributed over the length and breadth of India, by such a proceeding. We believe that there is no other country in the world where the authorities have at their command so many medical officers with special and technical information of all kinds, in addition to that derived from their medical training. Is it to be supposed, then, that a commission cannot be formed by a selection from their numbers without going to the expense of sending one from this country? We cannot believe, however, as we have said, that the Home authorities will be guilty of anything so palpably absurd as they are stated to contemplate, and we can only protest against their adopting a course which can lead to no results, except the useless expenditure of money, and the desire on the part of a commission to make capital out of information that could easily be procured without any extraneous aid.

THE EPIDEMIOLOGICAL SOCIETY.

AT the next meeting of the Epidemiological Society, Inspector-General Lawson will read a paper on "Errors in the Usual Method of Investigating the Causes of Epidemics," and submit the following propositions for discussion:—

1. That as in physical, so in epidemiological investigation, we must adhere to the inductive method; but there is this difference, that while in the former the various factors concerned can either be isolated or their properties determined by experiment, independently of the particular question under examination, in the latter we only infer the existence of the causes from the appearance of the appropriate disease, and have no certain knowledge of the existence at any time or place, unless we see the disease arise.

2. That in epidemiological investigation what has been called negative evidence is of equal importance in guiding us to the correct conclusion as that which has been designated affirmative, because we may have overlooked some factors essential to the result, which can only be detected by comparing closely the antecedent in the negative instances with those of the affirmative.

3. It is necessary to embrace the action of what have been denominated epidemic causes among the influential factors in the spread of epidemics. This illustrated by the late outbreak of small-pox.

4. It is often necessary to exclude the operation of local causes to permit of a correct conclusion being arrived at where there may be a question of importation. This illustrated by the yellow fever in H.M.S. *Bristol*, at Sierra Leone, in 1866.

5. It is necessary to decide the light in which cases of sporadic malignant cholera are to be regarded where there has been no trace of importation, before any certainty can be attained as to the various local and personal causes assigned for that disease when in the epidemic form.

Members of the profession interested in the subject are invited to attend the meeting.

REGISTRATION OF SICKNESS.

WE have been favoured with a series of charts of disease in Manchester and Salford for the ten years 1861–70, prepared from the weekly returns of the Manchester and Salford Sanitary Association, by Dr. Arthur Ransome. It is impossible to speak too highly of the interest and value of these charts, or of the disinterested labours of those medical men, about thirty in number, who voluntarily supply the returns from which the charts are prepared, and especially of Dr. Ransome, who does the work of chart-making. It is highly discreditable to us as a nation that work of so much value, requiring so much care and trouble, has to be done gratuitously. Let us hope that before the present Government comes to an end it will distinguish itself by making State provision for the registration of sickness. These returns have reference to seven principal diseases, cases of which go far to make up the bulk of medical practice—namely, small-pox, scarlet fever, measles, whooping-cough, bronchitis and catarrh, diarrhœa, and continued fever. Charts can be had at 5s. the set. Wherever there is an association of medical men such returns should be procured. Dr. Philipson, of Newcastle-on-Tyne, has long pro-

cured such returns from members of the Northumberland and Durham Medical Society. Dr. Ballard's valuable records of the public sickness in Islington for twelve years are well known. The only improvement in these charts which we have to suggest is the indication, somehow or other, of the *mortality* from the diseases the prevalence of which is indicated, and the differentiation of the cases of continued fever. All men who are capable of interest enough in sanitation questions to contribute these returns will be capable of diagnosing accurately the different forms of continued fever.

DR. NEIL ARNOTT, F.R.S.

THE profession and the public generally will learn with much regret of the loss of a man so distinguished in the medical profession and the scientific world as Dr. Neil Arnott, F.R.S., whose death took place on Monday last, at his residence near Regent's-park. Dr. Neil Arnott's was a well-known name in connexion with a practical invention which carried off the Rumford Medal of the Royal Society twenty years ago, to thousands who probably had never heard of him as one of the most cultivated, vigorous, and able-minded men of this age. Dr. Neil Arnott, in addition to his well-known "Elements of Physics," which, owing to its clearness of style and masterly treatment of the subjects it embraced, went through, we do not know how many editions and translations, gave to the world the results of a really philosophical and scientific mind; and so imbued was he with a spirit of enthusiasm for discovery and truth, that what he failed in effecting by his writings, he strove to attain by his numerous donations for the foundation of scientific scholarships in the London and Scottish universities. Dr. Neil Arnott was Physician Extraordinary to the Queen, a F.R.S., Member of the Legion of Honour, and a Member of the Senate of the University of London on its establishment in 1835.

PROF. HUXLEY AT ABERDEEN.

IN an address of characteristic clearness, freshness, and vivacity Prof. Huxley introduced himself to the University of Aberdeen as its Lord Rector. From a retrospect—not very accurate, by the way—of the rise and functions of universities, he passed to the consideration of these seats of learning as auxiliaries to the advancement of science. Scotland, he said, had retained more of the comprehensive character of the university system than England; but even Scotland had failed to expand with the growth of modern science. Prof. Huxley then urged his pet scheme of making chemistry and zoology a part of grammar-school education, so as to enable the student, when at the university, to give more exclusive attention to physiology. Throughout, the address was a bit of special-pleading in favour of physiology—vigorous, adroit, and occasionally brilliant—but not calculated to reverse the opinion passed upon its author by Venetianos, of Berlin:—"Wollte ein Professor der Philosophie in Berlin, in einem Vortrage die Worte fallen lassen: 'Der grosse Philosoph Huxley,' so würden unzweifelhaft seine Zuhörer in ein schallendes Gelächter ausbrechen."

THE DENTAL HOSPITAL OF LONDON.

THE committee of this hospital gave a *conversazione* on Monday last, the 2nd instant, in their new building in Leicester-square, which was very numerously attended. Mr. Sercombe, the president, delivered an inaugural address, which commended itself to his listeners both on the score of brevity and quality. We have already described in detail the arrangements of the new establishment. The large room for special operations, as stopping, &c., at the top of the house, was much admired, as also the museum and lecture-hall. A number of chairs were exhibited, as also several novel methods of illuminating the mouth. We believe that this institution has entered upon not only a new but a long lease of success, thanks to the active and continued exertions of Mr. Edwin Saunders, Mr. Sercombe, and the other trustees.

DR. FORBES WINSLOW.

WE have learnt, with great regret, but too late for a more extended notice this week, of the death of Dr. Forbes Winslow, whose name has been so long associated with psychological medicine in this country. Dr. Forbes Winslow's death occurred at Brighton on Tuesday last, after a few weeks' illness. We are requested to state that his remains are to be removed from Brighton on Tuesday next, by the 8.45 A.M. train, arriving at London-bridge station at 10 o'clock, where a hearse will be in waiting to convey the body to Fenchurch-street station, leaving there by the 12.10 P.M. train for Epping, where, at his own expressed wish, he is to be interred, his eldest son, the Rev. Forbes Winslow, being vicar of that parish. All friends who desire to pay a last tribute of respect to his memory will have an opportunity of doing so, either at London-bridge station or Fenchurch-street.

THE PECULIAR PEOPLE.

THE Peculiar People continue to act peculiarly. John Benton, of Barking-road, Canning-town, who some time since thought it the part of a godly man to let his wife die without procuring medical assistance, has now allowed his child to die in the same neglected way. As before, he acts with impunity, and the coroner and jury have to content themselves with a fruitless expression of censure. The doctor, Mr. Levick, deposed that the child died from whooping-cough, causing congestion of the brain, with *several clots at the base of the brain*. He very naturally expressed the opinion that judicious measures for the relief of the whooping-cough would probably have prevented the fatal brain symptoms. But the law which would punish a man for giving his child a medicine that would cause a fatal congestion, has no punishment for the same man if he simply neglects the use of means to prevent a fatal congestion. Recurring to the pathological aspects of the case, they too are somewhat "peculiar." It is very seldom that the cerebral vessels of children fail under any strain put upon them, but here there seems to have been a true cerebral apoplexy, an event sufficiently rare to be noted.

SLEEPING WITH OPEN WINDOWS.

WE have more than once had occasion to remark on the thoroughness with which Dr. MacCormac, of Belfast, believes in "prebreathed" air as the cause of consumption. He has, very lately, in a letter to Professor Rutherford, repeated the statement of this delightfully simple doctrine. The Professor would seem to have made the statement that "an open window can seldom be endured in the night in this country." Dr. McCormac retorts that it is not only endurable but enjoyable, and that his practice is to sleep every night, winter and summer, betwixt the open door and window, both widely open, the draught rushing backwards and forwards as it lists. All his family does so. Nothing is more necessary than for physicians to preach the importance of sweet fresh air, especially in bed rooms. But sleeping between widely open door and window would certainly lead some people into a bronchitis or a pneumonia. It might save them from consumption, but if it killed them by a shorter disease, little would be gained. It is not necessary to incur one risk in order to escape another.

PROFESSOR SHARPEY.

THE late Government and Professor Sharpey are alike to be congratulated. Of Dr. Sharpey's merits as a physiologist there is no need to speak. As another distinguished worker in the same fields of investigation has lately told us, a thorough study of human physiology is in itself an education broader and more comprehensive than much that passes under that name, and probably no one as a teacher has done more for the advancement of physiological knowledge than Professor Sharpey. The medical profession will notice with extreme gratification, therefore, that the late Government has recognised the Professor's long services, and the good work he has done in the cause of science, by the bestowal on him of a pension of £150 per annum.

PULLMAN'S CARS.

THE Pullman system has at last been introduced into England. Two of these luxurious carriages started on the 21st ult. on the Midland Railway for Bedford, being occupied by about twenty persons to whom invitations had been sent by the Company. The carriages were examples respectively of the "day" and "sleeping" cars, and are intended to be statedly employed on the line. These latter must prove a great boon to invalids and persons whose nervous system has from any cause become weakened. To such individuals railway travelling under ordinary circumstances is simply unbearable. It may, however, by Pullman's system, which has been long and profitably adopted in the States, be made not merely tolerable, but absolutely agreeable, for by its means railway transit is robbed of its tedium, and in one of these cars a person may go a long journey whilst surrounded by all the comforts and conveniences of a well-appointed home. We should like to see the system adopted on all the more important lines in the kingdom.

THE GENERAL MEDICAL COUNCIL AND THE LATE GOVERNMENT.

THE General Medical Council has at length the prospect of a local habitation. The Executive Committee has accepted the offer of the College of Chemistry, Oxford-street, made by the Treasury before the change of Government. Dr. George Paget, the President of the Council, has in a letter thanked Mr. Lowe for the trouble bestowed in the matter by him. Though the conditions are not so favourable as the Executive Committee hoped for, the President expresses satisfaction that the Government, in making the offer, did justice to the Council by recognising its claims to a certain measure of public assistance.

THE METROPOLITAN HOSPITAL SUNDAY FUND AND THE DISPENSARIES.

WE are informed that Canon Miller's Committee have agreed upon a report to the Council of the Hospital Sunday Fund as to the claim of dispensaries. The essence of the proposal is that the same principle be applied to both hospitals and dispensaries; in other words, that they be paid in the same ratio to their expenditure, minus their proprietary income. The report will be discussed at the meeting of the Council on Tuesday next, and if it be favourably received, the point of controversy in this noble movement will be removed.

DR. LIVINGSTONE.

WE understand that it is the intention of the Council of Charing-cross Hospital to institute a scholarship in memory of the late Dr. Livingstone, part of whose medical education was acquired at the medical school in connexion with their hospital. Dr. Livingstone was a man whom we are proud to identify as belonging to our profession, and any steps which may serve to perpetuate the recollection of his relations with us will, we feel sure, meet with a hearty and generous support from the admirers of the great African traveller.

THE *Jewish Herald* states that Dr. London, who has done such good work in Jerusalem in connexion with the Rothschild Hospital, is about relinquishing his post. His loss will be severely felt in the Holy City, where he had laboured long and zealously on behalf of the suffering poor. The climate did not agree with Dr. London's family, who are now coming to Europe. We trust that another medical man will be found to carry on the duties of the hospital with zeal and efficiency.

AT a meeting of the Dublin Pathological Society held on the 21st ult., Dr. Bennett showed an extremely interesting case of anchylosis of the hip-joint. After death it was found that a canal of communication had arisen between the internal aspect of the acetabulum at the junction of the three bones, and which, passing into the neck of the anchylosed femur, had emerged on the front of the thigh. This tunneling, it may be mentioned, was owing to irritation from a piece of diseased bone within the pelvis.

THE Nottingham Dispensary seems to be in a thriving state; and it has done what all thriving institutions should do—raised the salaries of its two resident medical officers, Drs. McCaw and White. The chief good conferred on dispensary patients is in the form of an intelligent medical man, and a little increase of salary, which secures the continuance of an efficient officer, reflects credit on the judgment of the committee.

THE *Independance Belge* states that there are no symptoms of amelioration in the mental condition of the unfortunate ex-Empress of Mexico, whose sad fate has often been commiserated by the English press. Her fixed idea at present is that attempts are being made to poison her. The bodily health of the ex-Empress Charlotte continues remarkably good, a by no means unusual circumstance in even the most deplorable forms of mental alienation.

A LARGE meeting of the inhabitants of Peckham was held on Tuesday evening with the object of forming an association to assist the local authorities in carrying out the provisions of the Adulteration Act, in a manner that shall not weigh unjustly on the retail trader. The association pledges itself to watch the interests of all trades and to furnish legal assistance and competent analysts if necessary.

THE Glasgow University Court has remitted to a committee of their number to consider and report as to the best mode of raising funds in order to provide the necessary teaching apparatus and illustrations in connexion with the Physiology chair and other scientific chairs, there being no means at the command of the senators for this important purpose.

MR. WILLIAM MACCORMAC has been gazetted staff-surgeon, Mr. F. Daldy surgeon, and Mr. P. T. Scott and Mr. Harry Leach additional surgeons, to Mr. Brassey's corps of Royal Naval Artillery Volunteers. Dr. Ralph Gooding has been gazetted to the assistant-surgeoncy of the 5th (Blackheath) Kent Artillery Volunteers.

THE authorities of the University of Aberdeen have now under consideration a proposal to institute a new degree in arts—that of Bachelor of Science.

RUSSIA has expressed her appreciation of the life and labours of Livingstone. At the last monthly meeting of the Russian Imperial Geographical Society—the Grand Duke Constantine in the chair—the secretary, M. Venioukoff read a memoir of the illustrious traveller, which concluded as follows:—"Let England, which may be proud of having given birth to Livingstone, and of having supported him in his labours, learn that among us the merit of great men can be appreciated." Then the whole assembly—a very large one—by rising, paid a last tribute of respect to the memory of Livingstone.

THE quarterly meeting of the supporters of the Brompton Hospital for Consumption was held a few days ago, in the board-room of the institution. It appeared from the report that two more houses had been fitted up and furnished since the last court, thus increasing the accommodation available in the hospital to 246 beds. The receipt of several legacies was announced during the meeting.

DR. BALLE presented the other day to the *Faculté de Médecine* a young girl aged fourteen, named Blanche Dumas, from Issondun, whose body, from the waist downwards, is double—the two parts acting independently of each other. The two legs she uses for walking belong each to a different trunk, while a third one is quite insensible to pain. Her health is good.

AT a meeting of the St. Pancras vestry, the salary of Dr. Stevenson, as food analyst, was fixed at £100 a year. The recommendation of the Sanitary Committee was "that the analyst be paid £100 in addition to the £100 already received by him as expenses for the year ending Jan., 1874." The voices of the rigid economists, however, prevailed, with the result above stated.

WE shall await with great interest the result of the arbitration as to the King's College nursing, and it is a matter of great congratulation that the subject is in the hands of two such distinguished men as Lord Hatherley and Lord Selborne.

A CONTEMPORARY is of opinion that the petition against the return of Mr. O'Leary, a Dublin surgeon, for Drogheda, will be successful. The main objection rests on a technical point.

MR. LAWSON TAIT has been elected a foreign member of the Obstetrical Society of Berlin.

OBSTETRICAL SOCIETY OF LONDON.

A SPECIAL meeting of the Society was held on Wednesday evening to consider the following resolution, proposed at the last meeting of the Council:—"That, it appearing that the bye-laws and regulations framed on the foundation of the Society did not contemplate the admission of women as fellows, the Council is of opinion that the question ought to be submitted to a general meeting, to decide what shall be the proper interpretation of the actual bye-laws and regulations, or so to alter the bye-laws and regulations as to express clearly the intention of the Society as to the admission of women."

The chair was taken by the President, Dr. E. J. Tilt, who, in opening the proceedings, said that the gentlemen who signed the nomination-paper of Mrs. Anderson had no sort of wish that women should form part of their Society, but they felt that the question must inevitably come before them sooner or later. After mature consideration of the subject, it was felt that it was one of too great importance to be decided by an exceptional case; that it was a matter of principle that ought to be decided upon its own merits, independent of any feeling of respect that they might have for a lady who by English pluck and perseverance had actually fought her way into the Register. The question was submitted to a Special Council, and it was thought better by that Council that the fellows themselves should discuss the question and decide it. Technically the question turned upon the interpretation of the bye-laws, which were framed some thirteen or fourteen years ago, when there was no lady on the Register. The circular sent out by the Society had been replied to by ten fellows of the Society residing in the country, of whom eight were against the admission of women into the Society. One of those gentlemen said he should not object to the admission of female practitioners, provided they could have a room to themselves for their discussions.

Dr. MURRAY said the question was whether their laws admitted of the nomination of women as members and fellows of the Society. He was very much against the idea of admitting lady practitioners, and, in his opinion, by the bye-laws there was no contemplation of any woman being admitted into their ranks. He moved "That the laws of the Society do not admit of the nomination of female practitioners."

Dr. SAVAGE seconded the motion.

Dr. STEELE said, although in principle and feeling he most thoroughly agreed with Dr. Murray, he could not agree with him in his interpretation of the laws. It seemed perfectly beyond controversy that if the statutes said that "every medical practitioner" should be eligible as a fellow of the Society, if Mrs. Garrett-Anderson was a medical practitioner, she was clearly eligible for admission. If she was nominated, she would of course have to run the gauntlet of the ballot, but they could not upon the bye-laws refuse to receive the nomination of any "qualified practitioner." The policy of admitting ladies as fellows was a different question, and having endeavoured to ascertain the feeling of their medical brethren in the provinces, it seemed to be this: that it would be most undesirable that ladies should become members of the medical profession in any numbers, though it was extremely unlikely that that would ever be the case, and that the best mode of discouraging them would be not to offer any opposition to the nomination of individual cases, but to let them run the gauntlet of the ballot. Individually he should be disposed to vote for the admission of Mrs. Anderson, inasmuch as she had exceptional capabilities for carrying on the profession.

Dr. CLEVELAND said that when the bye-law was framed the admission of women into the Society was not contemplated, or it would have been differently expressed.

Dr. WYNN WILLIAMS pointed out that under existing regulations no other lady would be able to get on the Register.

Dr. GRAILY HEWITT, as one of the original founders of the Society, said that the framers of its laws never for one instant anticipated the admission of lady members.

Dr. H. SMITH saw no reason why the nomination should not be put. With regard to the admission of women, the difficulty would be this, that certain subjects might come before their meetings, and, though the women themselves might not feel the objection, men would object to be present when those subjects were discussed in the presence of women.

Dr. AVELING said he did not rise to plead the cause of women as obstetricians, because if there was one occupation for which they were less fitted than another it was that of attending to the emergencies of obstetric practice. At the same time, having a personal knowledge of Mrs. Garrett-Anderson, he was induced to sign her nomination paper, knowing that she was likely to remain the only qualified female practitioner in England, and that it was probable she would remain so, and that she would not obtrude herself upon the Society when papers were likely to be read during which her presence would perhaps be a disadvantage. On the broad question he should certainly vote against the admission of lady fellows.

Dr. ROUTH remarked that there seemed to be a fear of women being brought into the medical profession. (No, no.) He had no such fear. He did not think that the women of England would go to female practitioners when they could get male practitioners. He thought, however, that the Society was in error in wishing to give too exact and definite an interpretation to its bye-laws, because cir-

cumstances might alter at some future time. They always stood up for the education of women, and there might be a class which at some future time the Society would be willing to admit as associates.

Dr. GALTON thought the best way of bringing the matter to an issue was by moving an amendment. He therefore proposed "That the bye-laws be so interpreted as to allow of the admission of women into the Society." He did so on this ground, that the *raison d'être* of the Society was the advancement of the art of obstetric medicine, and if that art could be shown to be possibly advanced by the admission of women within their walls, it was surely their duty not to exclude them by any decisive vote on that occasion. The question ought not to be decided hastily. He held the opinion that women were unfit for the profession, but he should be sorry that the Society should be deprived of one great means of advancement of the obstetric art by the exclusion of those who had the opportunity, the ability, and the power to make observations which might redound to the credit of their Society.

Dr. RASCH seconded the amendment.

Dr. CHARLES TAYLOR, as one of the original members of the Society, said he presumed from Dr. Galton's remarks that he intended to vote against his own amendment. The original members would be unanimous in this, that when the Society was established they did not anticipate the pleasure of having ladies coming amongst them or the unpleasantness of their presence either (laughter). It was important that this matter should be settled once for all, and they were almost unanimously of opinion that their bye-laws did not admit, and were never intended to admit, lady fellows. That once being settled, the ladies could not again offer themselves for nomination by gentlemen who might be so polite as to have the ladies' cause at heart. The amendment was certain to be lost, but if there was any further doubt the best thing to do was so to frame the bye-laws as to put the admission of ladies quite out of the question. The universal opinion of medical men was that the Society would be very greatly damaged if they admitted lady fellows. He believed that a large number of members, pleased as they were to meet the ladies on other occasions, would be anything but pleased to meet them in the Society, and would secede from its fellowship.

Dr. WILTSHIRE said Dr. Taylor had given the pith of the whole matter. They were not met to consider Mrs. Garrett-Anderson's interest, excellent and clever woman though she might be, but the interests of the Society, and her election would be simply ruinous. If she were elected, there would be a very large secession of members, which would be very damaging to obstetrics. As they neither wished to damage obstetrics nor the Society, the best thing they could do in the matter would be so to interpret their laws, or to amend them if they required amendment, that the possibility of ladies being nominated by fellows of the Society could not again occur. The introduction of one lady, for there was only one, might be a questionable benefit to herself, but it would be an unquestionable damage to the Society, and if they were interested in the Society and in obstetrics, the best thing they could do was to exclude the admission of women altogether.

The amendment was then put and lost, only four hands being held up in its favour.

The original motion as proposed by Dr. Murray, "That the bye-laws of this Society do not admit of the nomination of female practitioners to the Fellowship of the Society," was carried with but one dissentient.

GLASGOW PATHOLOGICAL AND CLINICAL SOCIETY.

DR. GAIRDNER, PRESIDENT, IN THE CHAIR.

AT the second meeting of this Society,

Dr. JOSEPH COATS showed a preparation from a case of Lympho-Sarcoma of the Bronchial Glands, extending to the pericardium and heart on the one hand, and the lungs and bronchial tubes on the other. He pointed out that in such cases there is originally a simple enlargement of the lymphatic glands, due to a hyperplasia of the normal gland-cells, and that the microscopic structure does not appreciably depart from that of the normal lymphatic gland. Microscopic specimens were shown, from which it could be seen that in the present case this structure was present in the most widely-separated parts of the tumour. The original simple enlargement of the lymphatic glands in this disease is distinguished from the enlargement found in scrofulous disease by the tendency to degeneration characteristic of the latter, and from that of leuchæmia by the increase of the white blood-corpuscles which is the special sign of that affection. The speaker then went on to point out the infecting character of the present growth, and to enumerate the various organs and structures invaded by it. During life persistent vomiting and signs of laryngeal obstruction existed; after death the aryteno-epiglottidean folds were much swollen, especially on the right side.

Some discussion took place as to the differentiation of such a tumour from a cancer, and as to the essence of malignancy. Dr. REID suggested that although such a tumour invaded various organs and tissues, and actually caused death, true malignancy was only shown by a tendency to cause death apart from the invasion of vital organs, a feature which he understood was absent in this case.

Dr. JOHN DOUGALL showed a Uterus with ovarian tumour attached, removed twenty days after parturition. The woman was delivered at the full term of a small but healthy child. No suspicion of ovarian disease existed till two days after confinement, when the abdomen was seen to be still enlarged. Twelve days afterwards fifty ounces of tenacious fluid were removed by tapping, with some relief; but in a week the patient died, and after death 150 ounces of putrid fluid were taken from the tumour. The uterus was small and quite healthy.

Dr. ALEX. ROBERTSON showed a specimen of Horse-shoe Kidney, recently removed from a patient at the Town's Hospital.

Correspondence.

"Audi alteram partem."

CHLORAL AS AN ANÆSTHETIC DURING LABOUR.

To the Editor of THE LANCET.

SIR,—The eminently practical and lucid remarks on this subject by Dr. W. S. Playfair (THE LANCET, February 21st) constitute a most valuable contribution to the rules for the management of natural labour.

There is one point, however, upon which I am unable to coincide with Dr. Playfair—namely, where he states that "we should not think of administering chloroform towards the termination of the first stage of labour before the complete dilatation of the os, and where the sharp grinding pains perhaps produce more suffering, and are less easily borne, than the more forcing pains of a later stage."

Now, it is precisely under the above conditions that I have found chloroform most invaluable, safe, and free from the possible drawbacks alluded to by Dr. Playfair. In this stage a slight degree of anæsthesia relieves the comparatively useless yet harassing pains, and rarely fails to procure refreshing sleep in the intervals, producing, in my experience, a far more satisfactory effect than opium. If chloroform really has a tendency to diminish the force and frequency of uterine contractions, it is, I think, only during the second stage, when expulsive force is required, and when the drug, to be effective, must be given freely, that this objection to its use obtains. I have no experience in the use of chloral in labour, but it seems to me, on Dr. Playfair's own showing, that as a substitute for chloroform it can be relied on chiefly in just the conditions in which the latter is equally safe, and perhaps rather quicker and more manageable in its effects. I can, however, well believe—and am disposed to put it to the test—that in some conditions chloral will be found useful as substitute or adjunct to the exhibition of chloroform.

I am, Sir, yours &c.,

A. B. STEELE,
Lecturer on Obstetrics, Liverpool Royal Infirmary School of Medicine.

March, 1874.

BLOODLESS OPERATIONS.

To the Editor of THE LANCET.

SIR,—My attention has been directed to a lecture on bloodless operations in your issue of Saturday last. In this it is implied that, until 1868, practice with Middledorpf's apparatus was but little known and never followed. It is also implied that, by the introduction in 1868 of a case of instruments through Dr. Beigel, and subsequently of a second case through Messrs. Krohne and Sesemann, the galvanic cautery has been introduced into London practice.

Allow me to acquaint the author of this lecture that from 1863 the Middledorpf apparatus, shown in the Exhibition of 1862, has been in constant use at St. Thomas's Hospital. By the liberality of our late treasurer, at the suggestion of Mr. Simon, this case of instruments was bought; and the late Mr. Millikin went to much trouble in order to have all perfect. Mr. Simon was the first, I believe, to make practical use of the instrument. It has been in constant use ever since 1863, for all sorts of operations—for nævus, piles, tongue, and uterine operations: in fact, for every operation in which the cautery is applicable.

I am, Sir, your obedient servant,

March 5th, 1874. SYDNEY JONES.

POISONING BY CHLORAL.

To the Editor of THE LANCET.

SIR,—It is high time to draw the attention of the public to a dangerous practice which is now prevalent—I allude to the unchecked sale of syrup of chloral, which is very extensively employed as a domestic remedy—I might almost say an indulgence.

I was recently summoned to see a young lady who nearly fell a victim to this practice. I found her in a profound state of coma, from which her friends had vainly endeavoured to rouse her. After sprinkling her face with cold water, she rallied sufficiently to enable me to administer some mustard-and-water, which caused her to vomit. She gradually recovered, but her mind remained in a confused state for a considerable period after consciousness was restored. I ascertained that she had been in the habit of taking a teaspoonful of the syrup of chloral occasionally at bedtime, but on the evening when I saw her she had taken a much larger quantity, with a view, she said, of relieving a headache. From what remained in the bottle, it seemed probable that she had swallowed about seven teaspoonfuls (equal to about seventy grains), as I understood the strength of the syrup was ten grains to a drachm.

Why should not druggists be under the same restrictions for the sale of syrup of chloral as for any other poisonous drug? And, I would ask, why should not all bottles containing syrup of chloral be labeled "Poison"?

I am, Sir, your obedient servant,

Harley-street, Feb. 24th, 1874. J. M. WINN, M.D.

PUBLIC VACCINATION.

To the Editor of THE LANCET.

SIR,—As a public vaccinator to a London district I have to urge a complaint against my brother practitioners, which, I doubt not, is shared by all public vaccinators in large towns, and which I ask you, with your great influence, to remedy.

My district is situated near one of the large metropolitan hospitals, the students of which attend most of the midwifery cases amongst the poor. This, of course, deprives me of the fees to which, as medical officer of the district, I should otherwise be entitled; but as it, at the same time, relieves me from much unpleasant work, and also gives them opportunities of seeing practice which they could not otherwise obtain, I do not complain of it; but what I do complain of, and I think justly, is that the mothers are requested to take the children, when three months old, to the hospital to be vaccinated, thus robbing me of the vaccination fees to which I am entitled.

I should not so much complain of this proceeding if the fees went to the hospital or in any way into the pockets of the profession, but as it is, it is so much money lost to the profession, the only parties benefited being the ratepayers, who already reward our services too lightly. It is done ostensibly that the students may learn vaccination, but in reality for the benefit of the obstetric assistant, who receives a guinea fee for each student instructed in vaccination. But who, let me ask, ought to be the teachers of vaccination? Surely the public vaccinators, who have had years of experience, and whose work is tested by Government inspectors, and not by young men who have not long passed their examinations, whose work is entirely without supervision, and who, perhaps, have not vaccinated more than a dozen or so cases before they begin to teach it. No wonder, with such teaching, we find vaccination so unsatisfactorily performed amongst the general public, and hear so often of people being insusceptible to vaccination. A vaccination station has just been selected in my district which is more than a mile from my house, and as I am bound to stop there an hour, more than an hour and a half of valuable time will be expended in vaccinating — how many? If matters remain as at present, not more than three or four; so that, at two shillings per case, I shall receive at most the magnificent sum of eight shillings for that expenditure of time.

Not only do the hospitals, but most of the private practitioners also, make a practice of vaccinating gratis poor persons who have received a notice to attend at my station, most of those who keep an open shop taking care to have one compartment of their window labeled in large letter "vaccination gratis."

Not only am I thus robbed by my brother practitioners of a large sum yearly, but, having in consequence so limited a number of cases to select from, I have sometimes considerable difficulty in keeping up a stock of reliable lymph.

Taking the metropolis alone, this practice of free vaccination must rob the profession of a very large sum which ought to be paid to it by the general public. Surely we do enough gratis and thankless work for the public without thus systematically robbing one another for its benefit. The practice is as good an illustration of the old fable of "the dog in the manger" as we could well have. Each practitioner seems to say to himself, "as I cannot get the fees for vaccinating poor persons myself, I will take precious good care that the public vaccinator does not get them."

In conclusion, I would call on all those who, like myself, are public vaccinators, and suffering like injustice from their brother (?) practitioners, to help me to put a stop to so glaring an abuse under which we have suffered so long and so patiently.

I am, Sir, your obedient servant,

Feb. 23rd, 1874. A PUBLIC VACCINATOR.

Medical News.

BRITISH MEDICAL SERVICE.—The following is a list of candidates who competed successfully for appointments as Surgeons in the above Service at the examination held at the London University on Feb. 16th:—

	Marks.		Marks.
Ward, B. L. ...	2221	Pratt, W. S. ...	1540
Gallwey, J. G. ...	1995	Gormley, J. A. ...	1444
Prendergast, J. ...	1912	Fass, J. E. W. ...	1368
Hickson, G. B. ...	1905	Young, F. S. ...	1355
Miller, W. B. ...	1890	M'Creery, N. ...	1350
Jagoe, B. K. ...	1725	Greene, J. J. ...	1345
Smyth, C. C. H. ...	1706	Martin, J.	1296
Smith, J. A. ...	1545	Turner, C. P. ...	1235

INDIAN MEDICAL SERVICE.—The following is a list of candidates who were successful at the competitive examinations held at Burlington House on Feb. 16th:—

	Marks.		Marks.
Leckler, H. M. ...	2590	Lancaster, J. ...	1985
Corbett, J. L. ...	2558	Yeld, H. P.	1985
Mair, E.	2370	Warden, C. J. H. ..	1925
Benson, P. H. ...	2335	Wilkins, J. S. ...	1890
Browne, S. H. ...	2327	Smith, J. G. M. ...	1875
Armstrong, J. ...	2325	King, W. G. ...	1840
Dawson, L. R. ...	2213	Fullerton, J. C. ...	1835
Wardle, R.	2210	Patterson, D. A. ...	1820
Shircore, J. C. ...	2060	Barren, W. A. ...	1720

Thirty-six candidates competed for eighteen appointments, all of whom were reported qualified.

APOTHECARIES' HALL. — The following gentlemen passed their examination in the Science and Practice of Medicine and received certificates to practise on Feb. 26th :—

Bond, George Weddall, Pulham St. Mary's, Norfolk.
Pilkington, Henry Oldfield, Lune-street, Preston.

The following gentlemen passed their Primary Professional Examination on the same day :—

Henry Abdy Collins, Guy's Hospital ; Brougham Robert Rygate, London Hospital ; John Bain Sincock, London Hospital.

A SEVERE outbreak of typhus fever is reported from Armagh, Ireland.

THE Royal London Ophthalmic Hospital has received a sixth £1000 from T. R. C.

PRESENTATION.—We are pleased to learn that Mr. C. H. Johnson, of Westbourne-place, Eaton-square, has recently had presented to him, by his numerous friends and patients, a very handsome silver tea and coffee service, with silver salver bearing a suitable inscription. The presentation was made on the occasion of Mr. Johnson leaving Shifnal, Salop, where he had practised with much success for the last fourteen years.

THE HANCOCK TESTIMONIAL.—The portrait of Mr. Hancock, by George Richmond, R.A., which is to be presented to him by his friends and admirers on the occasion of his retirement from the office of senior surgeon to Charing-cross Hospital, is progressing towards completion. Arrangements will, we understand, be made for providing each subscriber with a photographic copy of the picture. The subscription-list is still open, and intending subscribers may forward the amount of their subscriptions to Mr. Woolcott, Secretary to the Testimonial Committee, Charing-cross Hospital.

THE LATE MR. MORSON.—It is seldom that we go beyond the limits of the profession in our obituary notices, but the name of Mr. T. N. R. Morson, the well-known chemist, must be so familiar to our readers that we cannot but make exception to a general custom, and express our regret at having to announce his death, which occurred on Tuesday, the 3rd inst., at his house in Queen-square. Mr. Morson was apprenticed in the early part of this century in the shop of a chemist, who was also an apothecary, practising in the neighbourhood of Fleet Market and the old Prison. Leaving his apprenticeship, Mr. Morson passed on to Paris, and was there engaged under the most eminent chemists of the day. On returning to England, he commenced business in the old district, but shortly afterwards removed to Southampton-row, where he quickly established his reputation as a manufacturer of the alkaloids and finer chemicals. The energy, perseverance, and scientific knowledge brought to the work increased that reputation year by year. When the Pharmaceutical Society was established, the name of Morson became prominent as one of its promoters, and no man worked more earnestly for its advancement. Of the Royal Institution, the Linnæan, and other Societies he had for years been a well-known member.

Medical Appointments.

CALDWELL, S., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Shercock Dispensary District of the Bailieborough Union, Co. Cavan, vice Chambers, resigned.

CANTON, E., F.R.C.S.E., has been appointed Surgeon to the Royal Infirmary for Children and Women, Waterloo-road.

CHARNLEY, Mr. W., has been appointed Resident Physician's Assistant to the Middlesex Hospital, vice Pitts, appointed House-Surgeon to the West Herts Infirmary, Hemel Hempstead.

CLARKE, W. H., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer to the Stratford-on-Avon Union Workhouse, vice Le Sage, resigned.

CLEAVER, E. L. (Assistant Demonstrator of Practical Chemistry to the Pharmaceutical Society of Great Britain), has been appointed Public Analyst for St. Mary Abbotts, Kensington, vice Dudfield: £50 per annum, and 5s. per analysis.

CLOUTING, J. R., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Croxton District of the Thetford Union, Norfolk, vice Bousfield, deceased.

CRAWFORD, C. H., M.D., has been appointed Assistant-Physician to the Staffordshire General Infirmary.

DAVIES, Mr. E. K., has been appointed Resident Obstetric Assistant to the Middlesex Hospital, vice Humphreys.

DICKINSON, E. H., M.B., C.M., M.R.C.P.L., has been appointed Hon. Physician to the Liverpool School for the Indigent Blind, vice Macnaught, resigned.

DOUBLEDAY, J., M.R.C.S.E., has been appointed Medical Officer for the Chiddingfold District of the Hambledon Union, Surrey, vice Napper, resigned.

DOYLE, P. O'C., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer and Public Vaccinator for District No. 3 of the Dursley Union, vice Benson, resigned.

DUNN, R. W., M.R.C.S.E., has been appointed Medical Officer for the Western District of the Strand Union, vice Brookes, resigned.

EVANS, W. W., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer and Public Vaccinator for the Llanfair District of the Llanfyllin Union, Montgomeryshire, vice Thomas, deceased.

GAMBLE, B., L.K.Q.C.P.I., L.R.C.S.I., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Enniskillen Dispensary District of the Enniskillen Union, vice Rogers, resigned.

HALL, F. De H., M.D., M.R.C.P.L., has been appointed an Hon. Assistant-Physician to the Metropolitan Free Hospital, vice Partridge, resigned.

HUMPHREYS, Mr. H., has been appointed Physician's Assistant to the Middlesex Hospital, vice Fenn.

MAY, H., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Bow and Colebrooke Districts of the Crediton Union, vice Thurston, resigned.

MURPHY, G., L.R.C.P.Ed., M.R.C.S.E., has been appointed Medical Officer and Public Vaccinator for the Stanwix District of the Carlisle Union, vice Maclaren, resigned.

PARRY, D. L., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed House-Surgeon to the Infirmary and Dispensary, Bridgnorth, Salop.

PEYMAN, A. P., M.R.C.S.E., has been appointed Medical Officer to Court Clarendon A. O. Foresters, Wootton-Bassett, vice Cooper, resigned.

POOLSON, W., M.R.C.S.E., L.R.C.P.Ed., has been appointed Medical Officer of Health for the Roundhay and Seacroft Rural Sanitary District: £35 per annum; acreage 3443; population 1813.

SARJANT, J. J., M.R.C.S.E., has been appointed Assistant Medical Officer at the Institution for the Insane, Coton-hill, Stafford, vice Yeats, resigned.

TROUSDELL, J. E., L.F.P. & S. Glas., L.R.C.P.Ed., L.M., has been appointed Surgeon to the Charlaw and Sacriston Collieries, near Durham.

WALKER, G. E., F.R.C.S.E., has been appointed Hon. Surgeon to the Liverpool School for the Indigent Blind, vice Minshull, resigned.

WATSON, J. W., M.D., L.R.C.P.Ed., L.R.C.S.Ed., has been appointed Medical Officer, Public Vaccinator, and Registrar of Births &c., for the Newtownlimavady Dispensary District of the Newtownlimavady Union, vice Maclaughlin, deceased.

Births, Marriages, and Deaths.

BIRTHS.

DUNDAS.—On the 4th of Jan., at Port Blair, the wife of George Albert Dundas, M.R.C.S.E., L.R.C.P.L., Bengal Army, of a daughter.

LONGHURST.—On the 24th ult., at Weymouth, the wife of Dr. Longhurst, 60th Rifles, of a son.

MAJOR.—On the 2nd inst., at High-street, Hungerford, Berks, the wife of Harry P. Major, M.D., of a daughter.

MOORHEAD.—On the 16th ult., at Westbourne-park, Bayswater, the wife of T. Hamilton Moorhead, M.B., of a son.

MUIRHEAD.—On the 17th ult., at Heriot-row, Edinburgh, the wife of Claud Muirhead, M.D., of a daughter.

PHILPS.—On the 20th ult., at Queen's-road, Peckham, the wife of P. G. Philps, M.R.C.S.E., of a daughter.

PRICE.—On the 20th ult., at Pembroke-dock, the wife of W. S. M. Price, L.K.Q.C.P.I., Army Surgeon, of a son.

WILLS.—On the 5th ult., at Government House, Barbadoes, the wife of C. S. Wills, Surgeon Army Medical Staff, of a daughter.

MARRIAGES.

CLARKE—ACHESON.—On the 25th ult., John Say Clarke, M.D., to Matilda, daughter of the late Joseph Acheson, Esq.

JACKSON—SMITH.—On the 25th ult., at Balnagarth, Francis Edward Jackson, M.B., to Margaret Alexa, daughter of the late Francis Smith, Esq.

MAY—WHITE.—On the 25th ult., at the Parish Church, Bexley, Kent, T. May, M.R.C.S.E., of Crayford, Kent, son of S. May, Esq., of Fritwell, Oxfordshire, to Sarah Ann Punnett, daughter of F. White, Esq., of the Manor House, Bexley, and of Lime-street, City.

DEATHS.

BOLTON.—On the 21st ult., E. N. Bolton, M.D., of Percy-place, Dublin, formerly of Providence, Queen's County.

COPE.—On the 16th of Dec., J. S. Cope, M.R.C.S.E., of North Adelaide, South Australia, formerly of Wareham, Dorsetshire, aged 85.

DALTON.—On the 28th ult., in London, Dr. H. G. Dalton, of Demerara, aged 55.

DAYKIN.—On the 14th of Dec., at Forbes, New South Wales, Thos. Daykin, M.R.C.S.E., aged 59.

PARKER.—On the 16th ult., S. J. P. Parker, L.F.P. & S. Glas., of Hammersmith, aged 64.

PEARSON.—On the 22nd ult., Henry Pearson, M.R.C.S.E., of Swinton, near Manchester, aged 36.

REID.—On the 4th ult., at New York, Dr. Laurence Reid (son of the late Dr. Peter Reid, of Edinburgh).

BOOKS ETC. RECEIVED.

Mr. Dickson: Medicine in Relation to Mind.
Dr. Barker: The Puerperal Diseases.
Obstetrical Transactions.
Dr. Carpenter: Principles of Mental Physiology.
Drs. Meigs and Pepper: Diseases of Children. Fifth Edition.
Irish Medical Directory. 1874.
Mr. Culley: Handbook of Practical Telegraphy.
Deutsche Militairärztliche Zeitschrift.
Annales de Gynécologie.

METEOROLOGICAL READINGS

(Taken by Steward's Instruments).

THE LANCET OFFICE, MARCH 5TH, 1874.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Wet Bulb.	Dry Bulb	Solar Radia. in Vacuo	Max. Temp. Shade	Min. Temp.	Rainfall.	Remarks at 8 A.M.
Feb. 27	29·22	S.W.	47	47	...	54	42	0·50	Fine
„ 28	29·99	W S W	40	40	...	54	37	...	Overcast
Mar. 2	30·37	E.	42	42	...	51	41	...	Foggy
„ 3	30·59	E.	40	40	...	50	40	...	Overcast
„ 4	30·61	N.E.	37	38	...	45	35	...	Fine
„ 5	30·57	W.	39	42	...	...	37	...	Overcast

Notes, Short Comments, and Answers to Correspondents.

STOCKHOLM.

THAW has greater terrors for the good people of Stockholm than frost, however intense. As soon as the thermometer rises above freezing point the snow in the streets melts down into floating mud, the natural bridges which the ice constructs over the lakes and rivers can no longer be trusted, the air gets saturated with a chilly damp, and everybody has a catarrh. This winter has been one protracted thaw at Stockholm, and the effect of it has been an enormous increase of mortality. "A green yule makes a fat kirkyard" seems to hold good for Sweden, if not for England. During the few cold days experienced at Stockholm the death-rate went down, and cases of epidemic disease became scarce; but with the mild weather the small-pox began to rage again, and, we are sorry to learn, is still increasing. As it is now, according to the Swedish correspondent of the *Standard*, it is scarcely possible to avoid meeting a funeral hearse when walking up the chief thoroughfares, and everywhere in the streets twigs of spruce-fir strew the pavement to mark that there is somebody dead in the neighbourhood.

Medical Officer (Indian Army) cannot do better than consult Dr. Fayrer's Clinical Surgery in India; and Clinical and Pathological Observations in India, by the same author; both published by Messrs. Churchill.

THE communication of *Dr. G. Woakes* (Luton) shall receive early consideration.

ARMY MEDICAL DEPARTMENT.

To the Editor of THE LANCET.

SIR,—A proof of the growing unpopularity of the army medical service is afforded by a comparison of the number of marks obtained by the successful competitors for appointments as surgeons in H.M. army medical service and in H.M. Indian medical service at the examination held at the London University on Feb. 16th. The result of Mr. Cardwell's Warrant, and of the recent breaches of faith to which the members of the army medical service have been subjected, has been often predicted in your columns. The superiority of the candidates for the Indian service is particularly shown by the great difference in the number of marks obtained by the candidates at the end of each list, and must convince the army authorities that the great discontent now prevailing among the members of the army medical service has prevented the candidates of superior attainments from competing for their appointments.

Unless the army authorities are satisfied to allow matters to rest in their present unsatisfactory state, and to entrust the health of the British army to men of inferior calibre, they should not delay in attempting to rectify the errors of their predecessors in office.

I am, Sir, your obedient servant,

Southampton, March 3rd, 1874. NEMO.

To the Editor of THE LANCET.

SIR,—To give the profession and the public some idea of the very loose and unfair manner in which some of the "late" Secretary of State for War's manifestoes were concocted and drawn up to improve (off the face of the earth) the medical service of the army and military hospitals generally, I may mention the fact that I am credibly informed that regimental hospital orderlies find by the provisions of Pay Warrant dated 20th September last, and brought into force from 1st October, 1873, they are *losing daily pay* at the rate of, in most instances, twopence, in others even more, out of their scanty pittance. It is needless to remark on the miserable policy of this retrenchment, nor how difficult it might be to replace thoroughly trained hospital orderlies should they desire to return to their duty in the ranks, disgusted at this petty economy or oversight, whichever it may be. How also will it be possible to in future secure the willing services of steady, well-conducted soldiers, absolutely necessary for this important duty, if they are allowed to be so unjustly treated?

I remain, Sir, yours, &c.,

March, 1874. L.R.C.P.

CERTIFICATES.

A CORRESPONDENT complains that, as district medical officer, he is constantly asked to give certificates. The nuisance is a considerable one, and should be stated to the Local Government Board; but we fear there is at present no remedy.

Mr. W. J. Newberry, (Sutton Valence.)—Thanks. Such cases are not very rare, and our correspondent will find that M. Tessier, Sir Wm. Jenner, and others have alluded to the occurrence of such abscesses in connexion with a constitutional condition following acute fevers.

Dr. Robt. White, (Edinburgh.)—We should be glad to have our correspondent's report.

THE SIR JAMES PAGET TESTIMONIAL.

WE are asked to state that the engraving of the Portrait (which was entrusted to Mr. Burton, A.R.A.) is now completed, as well as the necessary arrangements for distributing the impressions. In consequence a communication has been made to the subscribers. The Hon. Secretaries (Mr. A. Willett, 36, Wimpole-street, W., and Mr. J. Langton, 18, Harley-street, W.) will thank any subscriber who has not received the Executive Committee's circular to inform them of the omission.

Medico-Chirurgicus, (Salford.)—German treatises generally benefit by translation into French. Häckel's work on Creation is no exception. In the version of Dr. Charles Letourneau (Reinwald, one vol.) the reader may enjoy the most complete exposition of the doctrine of evolution, known under the name of transformism, which embraces the two organised kingdoms, the animal and the vegetable, the lost species as well as the living. It is a genuine treatise on natural philosophy, while designating under that name the methods of induction and generalisation applied to the physical sciences, which owe to them the progress they have achieved. The same future, says a critic in the *Revue des Deux Mondes*, is perhaps reserved for the natural sciences in that fertile path in which Lamarck, Darwin, and Häckel have been the pioneers.

Novice.—The College of Surgeons is both a teaching and an examining body.

MERCURY IN LUES VENEREA.

To the Editor of THE LANCET.

SIR,—It is too much in the spirit of present medicine not only to eschew and treat with oblivious contempt the practice and therapeutics of the past, but to follow with a blind zeal any novelty, innovation, or possible discovery, even *ad nauseam*. The fashions of medicine are as changeable and with as little reason as are the dresses of the gentler sex. The mutability of the latter, however, entails not the hazards or mischances of the former. In both the path is sometimes retraced, and that with obvious advantage. This is notably the case with the employment of a remedial agent once lauded and in familiar use in the cure of a widely disseminated and loathsome disease, but which is now frequently looked upon with doubt and even with more than suspicion. Mr. Hutchinson and Dr. Broadbent have done good work to the professional public in resuscitating mercury from its half-moribund condition, in the reasonable expectation that it may be more extensively administered in the treatment of lues venerea. Doubtless it has been the cause of most baneful effects—effects induced only by its abuse. One might as well accuse gunpowder of bloody battles, or alcohol of the frightful moral and physical degeneration consequent on its abuse.

The remedy now in question, when cautiously and skilfully employed, is powerful for good, more especially against that malady wherewith its name seems indissolubly connected. But mercury is neither an antidote nor a cure. In an antidote or a cure the same symptoms do not recur. But there is no surety that lues may not again and again recur after mercurial treatment; and though iodide of potassium and syphilisation appear as competitors in the field, yet mercury has held and still holds its own. Yet though no absolute cure may be guaranteed, it so mitigates and releases the ailment that patient and physician are mutually satisfied.

The deleterious effects of mercury arise from its being pushed to ptyalism. This is not called for. The merest tainting of the breath or the slightest amount of "mercurial fetor" is alone required. As chancre is the local expression of a constitutional affection, so fetor evinces the system under mercurial action. Should the expiration be naturally of this odour, it is intensified; should the patient have been taking mercury, the odour is aggravated with consecutive ptyalism.

In exemplification of the above remarks was a case that came under my hands of a man of forty-five years or thereabouts, who had a large ulcer close upon the epiglottis, and engaging the entire base of the tongue, the body and tip of the organ apparently having been eaten away. The edge of the ulcer was everted, and of stony hardness, the submaxillary glands were enlarged, and the mouth was always filled with a profuse salivary secretion. Speech thick, obscure, and difficult. The patient "could neither eat, drink, sleep, nor smoke." He was a walking skeleton; life was a prolonged misery. This case was placed under my hands as one of cancer. Such was the opinion also of another surgeon with whom I consulted. Not knowing exactly what to do, iodide of potassium and chinchona were ordered. Afterwards, on thinking over the case, and being told that it "rose from a small pimple, which broke and ate its way back," the idea was at once suggested of lues—lues, and the primary form! However revolting the thoughts thereby engendered, I determined to test the malady by half-grain doses of calomel every six hours. The stump of a tongue took on a rapidly healing action; the hardness dispersed; the ulcer closed; the organ became soft, pliable, and of natural length. He ate, drank, slept, and smoked to his extreme satisfaction; his plumpness, ruddiness, and strength returned, and he expressed himself as "never having felt better in his life." I would but mention that the iodide was used in the middle of treatment; but the case suddenly retrograded, and it was thrown aside as useless. Again there was a just perceptible tenderness on the inner side of the left gum, when the calomel was reduced to three grains. The last week of treatment mercury was administered every twelve hours. Treatment lasted a month.

I remain, Sir, yours truly,

Argyll-road, Kensington, Feb. 25th, 1874. WM. MACFARLANE, M.D.

MAP SHOWING PARLIAMENTARY REPRESENTATION FOR 1874.

Mr. Wyld, Geographer to the Queen, has been good enough to forward us a copy of a new map of England and Wales, showing the places sending members to Parliament, with the numbers returned, divisions of counties and population, places of county election, and polling-places. The Conservatives are indicated by a red, and the Liberals by a blue mark. The map, as its title indicates, is likely to afford a great deal of useful information to all those whom it may concern.

Etiquette.—The enclosure has been mislaid.

Mr. H. B. Festing.—Our correspondent having already forwarded a communication to the *Evening Standard*, it seems unnecessary to publish one to the same effect in the columns of THE LANCET.

RUPTURE OF THE URETHRA DURING LABOUR.

AT a recent meeting of the Dublin Obstetrical Society, Dr. MacSwiney detailed an interesting case of rupture of the urethra occurring during labour. The patient was a lady aged twenty-four, whose labour was easy, and who had been attended by a midwife. Incontinence of urine resulted, and on examination it was found that the perineum was ruptured from the vagina to the rectum, and that there was a complete division of the urethra at about two inches from the external meatus. No instruments had been used, and the only explanation that could be given was, that at the moment of birth the bladder contained a large quantity of urine, and that being prolapsed into the vagina it was caught and forcibly driven down by a sudden pain, terminating the labour. No operation was performed, and three months subsequent to the injury the patient could retain and pass her urine at will.

A Country Surgeon should apply to the Secretary of the Local Government Board for an answer to his first two questions. A pauper, we presume, may have a vote for the county. In other words, a man is not disentitled to relief by the fact of his having such a vote. The action of the coroner described in our correspondent's letter was not in good taste, though we are not prepared to say it was illegal.

Mr. F. W. Ricketts, (Liverpool.)—We shall be glad to receive the views of our correspondent on the subject to which he alludes.

A CAUSE OF DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—The following presumed cause of diphtheria may interest some of your readers who, like me, may be medical officers of health.

Six weeks since a case of diphtheria occurred in a certain house in this town, which terminated fatally in a few hours from implication of the larynx and trachea. I took every possible precaution to prevent the complaint extending to other members of the family, and for a month all went well; but at the end of that time another child was seized with the same complaint in the same house, and very soon died. The nurse then told me that there had been two deaths from the same cause in the same house some fifteen years since, which I have reason to believe is a fact. Accordingly I got the borough surveyor to go with me, and thoroughly inspect all the premises. We entered a large lumber-room at the back of the house, which was very damp, and had an unwholesome odour about it, when he at once said, "Oh, this was used for a rag and bone store several years ago." I immediately jumped at this as being the most probable cause for the diphtheria, the room smelling as if both walls and floor teemed with animal refuse. I should say that after the two deaths from diphtheria some years since the house was only occupied by an elderly man and his housekeeper till the present occupants came in. Of course every means is being adopted to prevent a repetition of the catastrophe.

I am, Sir, yours faithfully,

King's Lynn, Feb. 28th, 1874. WALTER G. WALFORD.

Expectans (Chester) should make an application for the purpose to the Chief of that branch of the service at the War Office. The subjects embraced are, we believe, those connected with military hygiene and the medical aspects of military service. The examination is optional, and it is conducted at the Office of the Director-General of the Army Medical Department, 6, Whitehall-yard. Qualification is necessary to entitle to the capitation grant.

A Fifteen Years' Subscriber.—The answer to the question could only be got by inquiry at the individual hospitals. We do not know of any cases in which physicians to hospitals are actually allowed to practise pharmacy, surgery, and midwifery. In the Newcastle-on-Tyne Infirmary, some years since, a physician was objected to because he practised midwifery.

E. B. W., (Ipswich.)—Yes; Sir John Pakington, now Lord Hampton, was educated for the medical profession, though we are not aware that he was ever in practice.

Mr. Oglesby is thanked for his communication.

MEDICAL CORONERS.

To the Editor of THE LANCET.

SIR,—I am desirous of laying before your numerous readers the following case, which I will leave without comment, after stating that it fully exemplifies the necessity of appointing medical men to the important office of coroner, and shows further how little valuable medical statistics are likely to be if the practice detailed should prove to be the rule.

On the morning of the 27th of February last, shortly after six o'clock, I was called to see a child aged sixteen months, and upon my arrival I found it was dead. The child had suffered from a short illness, and had been prescribed for by the mother, who said she had administered ipecacuanha wine. She admitted that the death was quite unexpected, and that, in fact, she "had no idea it was going to die." As a matter of course I could give no certificate, and naturally expected that an inquest would follow. To my great surprise, however, on the evening of the following day the mother presented herself at my residence, and stated that the registrar had seen the coroner (who is not a medical man), and that he did not consider it necessary to hold an inquest; and after stating that he (the registrar) should enter the death as the result of inflammation of the lungs, he gave her the usual certificate.

I am, Sir, yours truly,

Clifton, Bristol, March 2nd, 1874. M.R.C.S. & L.S.A.

VICTORIA.

THE excess of births over deaths in 1872 was 16,530. The proportion of births, deaths, and marriages to every 1000 of the population was 35·93, 14·23, and 6·30 severally. This proportion shows under each head a decline from the figures of previous years; for the mean of the ten preceding years gives the following proportions:—Births, 40·48; deaths, 16·31; marriages, 7·12. There were 4791 marriages during the year, and 639 persons who were married were unable to sign their names.

UNNECESSARY INQUESTS.

THE *Welshman* of the 20th and 27th of February have been kindly sent to us, the former reflecting on Mr. Davies for not giving a certificate in a case which he had seen six hours before, presenting no deadly symptoms, and which had been seen in his absence by a brother practitioner. The facts are too scantily given for us to be justified in expressing a strong opinion; but we incline to the view of the *Welshman* that an inquest should have been avoided. Where a patient has been seen in one day by two medical men, and the latter one prescribes calomel and opium every four hours, there is a presumption in favour of the existence of illness that may have a fatal issue, and the case does not seem to be one for an inquest.

An Intending Candidate should take the degree of M.D. if he wishes to use the title of "doctor." It is not right to use it on the strength of the title to which he refers, which is acquired by a very ordinary examination, and confers no such privilege. We cannot agree with our correspondent that the title should be used by everybody indiscriminately.

M.R.C.S.E.—The law certainly contemplates the possession of a double qualification in Poor-law medical officers; but in certain circumstances guardians can appoint an officer with a single qualification, subject to the approval and direction of the Local Government Board.

NITRO-HYDROCHLORIC ACID IN ACUTE RHEUMATISM.

To the Editor of THE LANCET.

SIR,—I have read with no little interest the report in your number for Feb. 14th of the case of acute rheumatism in Guy's Hospital successfully treated by Dr. Wilks with nitro-hydrochloric acid. Besides the professional or therapeutic interest attaching to the case, it affords an apt illustration of the truth of the old maxim, that "there is nothing new under the sun." Dr. Grattan, of Drummin House, county Kildare, senior Fellow of the College of Physicians in Ireland, when he was a hospital physician in Dublin fifty years ago prescribed exactly the same medicine in similar cases. Forty years ago he retired from practice to live as a country gentleman on his own estate, and to change the perplexities of a professional life for those—equally hard—of a political one, which he still pursues. In years he numbers about the same as the late Sir Henry Holland, and he graduated at the same place about the same time. In times not long gone by I deemed his kindly recognition as the highest honour, and I can still boast of his friendship.

I am, Sir, yours respectfully,

Houghton-le-Spring, Durham, Feb. 18th, 1874. J. O'FLANAGAN.

QUACK ADVERTISEMENTS.

A CORRESPONDENT forwards us a small handbill and printed slip which, he tells us, were handed by a respectably dressed woman to his wife and mother whilst walking in Tottenham-court-road. The handbill is addressed to ladies only, and refers its readers to a certain dispensary; and the printed slip alludes to practices having for their object the limitation of families. Our correspondent may well ask whether nothing can be done to prevent ladies from being subjected to this sort of thing?

Medicus.—Very little remedy in the present state of the law, as a similar case in London lately showed. The public analyst might be appealed to in the matter.

BLOOD-POISONING.

To the Editor of THE LANCET.

SIR,—The following case of blood-poisoning has recently been under my care, and it seems to me to be a case similar to the one reported in your last issue as occurring in the Cardiff Infirmary.

J. A——, aged fifteen, a farm labourer, complained of pain in the right ankle, which was found to be swollen and tender. The temperature was 104° F., and the pulse 106. There was no wound on any part of the body. It appears that three days before the boy had got wet through, and had slept for two hours in his wet clothes. It was thought to be a case of acute rheumatism, and was treated accordingly; but two days after he had a severe rigor, after which he sweated profusely, and complained of pain in his right wrist, which soon became swollen, and it was evident a large abscess had formed, which, on being opened, discharged a large quantity of dark-looking pus. He became delirious; other abscesses formed in both knees, in the left wrist, in the right infra-clavicular region, and over the left shoulder-joint, from the profuse discharge of which he rapidly weakened and died.

I am, Sir, your obedient servant,

Liskeard, March, 1874. W. NETTLE.

ARMY MEDICAL SERVICE.

WE are reluctantly compelled to defer the insertion of a long communication on this subject.

M.D.—The number of venereal cases was remarkable, and certainly exceptional. The case of the dispensary seems to suggest the applicability of the provident principle; but, even here, a more perfect investigation of the cases would be necessary.

A Practitioner might find Hartshorne's Essentials of Medicine adapted to his requirements.

OBSTETRICAL SOCIETY.

To the Editor of THE LANCET.

SIR,—Your reporter at the last meeting of the Obstetrical Society has fallen into a twofold error, which, though of small importance to me personally, might under some circumstances cause much difficulty. He states: "Dr. A. B. Steele, of Liverpool, read a paper on two Cases of Dystocia from Contracted Pelvis." Now, in the first place, I was not present in the flesh on that occasion; and secondly, if I had been there, the paper, by the rules of the Society, would have been read by the Secretary, and not by the author. You will probably agree with me that it might prove very embarrassing in certain contingencies of professional life to be obliged to prove an *alibi* against the published statement of a journal so widely circulated and so justly relied on for its accuracy as THE LANCET.

Yours, &c.,

Liverpool, Feb. 28th, 1874. A. B. STEELE.

*** In reference to the above, we may state that the report in question was forwarded to us by the Secretary of the Society.

LIVERPOOL ROYAL INFIRMARY.

AT a meeting of the Medical Board held February 28th, 1874, it was unanimously resolved, "That, in the opinion of this Board, the duties of clinical clerk and surgical dresser should be performed at a recognised general hospital; and the Board desires to urge on the medical authorities the desirability of so modifying 'Note M, clause 23,' of the Report of the Committee of Reference as to make such performance of the duties referred to compulsory on every candidate presenting himself for examination."

Therapeutist, (Belfast.)—The lectures on Fevers, delivered by Dr. Stokes at the Meath Hospital and County of Dublin Infirmary, and edited by Dr. Moore, are now being published by Messrs. Longmans.

Hygiene and *W. H.* may consult with advantage the little work by Mr. Eassie on Healthy Houses, published by Simpkin, Marshall, and Co.; and the larger treatise of Prof. Parkes on Practical Hygiene, and that by Dr. Wilson.

HYPERTROPHIED NAILS.

To the Editor of THE LANCET.

SIR,—Having seen Mr. Philpot's letter in your issue of Feb. 21st, it may not be out of place to mention that I saw a very similar case five or six years ago on the Continent. I was travelling in a diligence near Rouen, and shall never forget the extraordinary nails possessed by a fellow-passenger—a Frenchman. They were, I am certain, quite an inch long, and similar in every way to Mr. Philpot's description, with the exception that this was not an old man. I should imagine him to have been between forty and fifty.

I am, Sir, yours, &c.,

February 24th, 1874. W. A. DINGLE.

X. Y. Z.—As we read the Medical Act, such qualifications entitle the holder to recover for both medicines and attendance; but some County Court Judges have ruled differently, and the question has not been carried to a higher court.

A. D., (Clapton.)—It would be invidious to nominate anyone, and it is contrary to our custom to do so. The gentleman referred to is, we believe, a reliable authority.

IN consequence of the unusual length of the reports of discussions at different Medical Societies, we are compelled to postpone the insertion of several articles and communications until next week.

COMMUNICATIONS, LETTERS, &c., have been received from — Prof. Maclean, Netley; Mr. Bryant, London; Dr. Payne, London; Dr. Morell Mackenzie, London; Prof. Gairdner, Glasgow; Mr. Teevan, London; Dr. Smart, Edinburgh; Dr. Tilt, London; Dr. Brewer, Dalston; Mr. Sydney Jones; Mr. Cripps; Mr. Groves, Cobham; Dr. Major, Hungerford; Col. Elliot, Portsmouth; Dr. Stephen Smith, New York; Mr. Carpenter, London; Dr. Murdock, London; Mr. Nettle, Liskeard; Mr. Archibold, Cheltenham; Mr. Hammond Smith; Dr. Murray, Newcastle; Mr. Rayner, Uxbridge; Dr. Woakes, London; Dr. Lyttleton Winslow; Dr. Wiltshire, London; Mr. Harrison, Liverpool; Mr. Lewis, London; Mr. Jackman, London; Dr. Gordon, Dover; Mr. Wyld, London; Mr. Poole, London; Dr. Winn, London; Mr. Custance, London; Mr. Cheese, Newport; Dr. Steele, Liverpool; Rev. J. Hatchard, London; Dr. White, Edinburgh; Dr. Wheeler, Gloucestershire; Dr. Hollis; Mr. Parry, Liverpool; Mr. Wall, Wigan; Mr. Rugg, Nenthead; Mr. Taylor, Manchester; Dr. Waters, Liverpool; Dr. Tate, Woodbridge; Mr. Terry, Bradford; Mr. Wightman, Ackworth; Mr. Lush, Andover; Mr. Jackson, Wigan; Mr. Adney, Much Wenlock; Dr. Broadhurst, Lancaster; Mr. Bellyse, Nantwich; Mr. Sharp, Truro; Mr. Williams, Talgarth; Dr. Mahon, Apsley Guise; Mr. Mead, Chesterfield; Mr. Anthony, South Shields; Mr. Clarke, Putney; Mr. Jackman, Southampton; Mr. Poyson, Seacroft; Mr. Whitaker, Derby; Dr. Mason, Sheffield; Dr. Kavanagh, Ware; Mr. Trousdell, Sacriston; Dr. Horne, Scarborough; Dr. Holdsworth, Wakefield; Mr. Stilliard, Birmingham; Mr. Clegg, Bacup; Mr. Sages, Brighton; Mr. Cross, London; Mr. Owen, Cambridge; Mr. Hanbury, London; Mr. Wyllie, Blandford; Mr. Smith, Woodley; Mr. Osborne, Norwood; Dr. Thomson, Oldham; Dr. Hewitt, Winkfield; Mr. Betts, Malmesbury; Mrs. Whittle, Holloway; Mr. Fox, Beaminster; Mr. Sandell, Yeovil; Mr. Irvine, Ingleton; Mr. Ricketts, Liverpool; Mr. Waddell, Tombland; Mr. Askew, Paignton; Dr. Hunter, Stapleton; Mr. Perrin, Manchester; Mr. Fenn, Richmond; Mr. Staniland, Bristol; Mr. Greene, Ohio, U.S.; Mr. Hatton, Twickenham; Mr. Coats, Tredegar; Mr. Prestwich, Oldham; Dr. Hemsted, Sheffield; Mr. Clarke, Huddersfield; Mr. J. R. Hewitt, London; Dr. Rowe, Abogoo Ashantee; Mr. Jones, Liverpool; Mr. Kennedy, Dublin; Mr. Fotheringham, Glasgow; Mr. Webster, Golcar; Mr. Darke, Salisbury; Dr. MacCormac, Belfast; Dr. Williams, Croydon; Dr. M'Donnell, Stoke Newington; Dr. Johnston, Tunbridge Wells; Dr. Leslie, London; Mr. Drew, London; Mr. Dowie; Mr. Willett, London; Mr. Festing, Bath; Mr. Newbery, Sutton Valence; M.R.C.S. and L.S.A., Bristol; H. L.; The Director-General of the Army Medical Department; A. D.; Royal Institution; S. H. R.; L. V. R. C; Hygiene; Arts and Medicine; A Country Surgeon; X.; Expectans; The Military Secretary; Apothecaries' Hall; A Dietetic Reformer; Ardwick and Ancoats Hospital, Manchester; Novice; Nemo; &c.

Indian Medical Gazette, Surrey Advertiser, Drawing-room Gazette, East London Observer, Isle of Man Times, Western Morning News, Brighton Guardian, North Wales Chronicle, Cork Constitution, Scotsman, Public Health, Newcastle Daily Chronicle, Liverpool Daily Post, Sunday Times, Manchester Guardian, Parochial Critic, Welshman, Cambridge Chronicle, South London Journal, British Architect, Metropolitan, Nottingham Daily Guardian, Animal World, Irish Hospital Gazette, and *Glasgow Herald* have been received.

Medical Diary of the Week.

Monday, March 9.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
GUY'S HOSPITAL.—Operations on the Eye, 1½ P.M.
ST. MARK'S HOSPITAL.—Operations, 9 A.M. and 2 P.M.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ST. PETER'S HOSPITAL.—3 P.M. Expected Operations: Lithotrity; Subcutaneous Urethrotomy.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Mr. W. K. Parker, "On the Structure and Development of the Skull in the Vertebrata."
MEDICAL SOCIETY OF LONDON.—7 P.M. 101st Anniversary: Awardment of Medals, Dinner, &c., at St. James's Hall.

Tuesday, March 10.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
GUY'S HOSPITAL.—Operations, 1½ P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.
ROYAL INSTITUTION.—3 P.M. Prof. Tyndall, "On the Physical Properties of Liquids and Gases."
DEAF AND DUMB ASSOCIATION, 272, Oxford-street.—8 P.M. Public Lecture: Mr. Chas. W. Vincent, "On the Beginnings of Electrical Research." (Interpreted by the Rev. A. Smith.)
ROYAL MEDICAL AND CHIRURGICAL SOCIETY.—8½ P.M. Mr. G. Gaskoin, "On the Relations of Asthma to Cutaneous Disease." — Dr. Hayne, "On the Amount of Carbonic Acid found by Experiment in the Air on board Wooden Frigates." — Mr. Savory will show the Upper and Lower Jawbones from a Case of Necrosis from Phosphorus.

Wednesday, March 11.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.
LONDON HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.
CANCER HOSPITAL.—Operations, 3 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Mr. W. K. Parker, "On the Structure and Development of the Skull in the Vertebrata."
ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. Murchison, "On Functional Derangements of the Liver."
EPIDEMIOLOGICAL SOCIETY.—8 P.M. Inspector-General R. Lawson, "On Errors in the usual Method of Investigating the Causes of Epidemics."

Thursday, March 12.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
ROYAL INSTITUTION.—3 P.M. Prof. W. C. Williamson, "On Cryptogamic Vegetation: Ferns and Mosses."
HUNTERIAN SOCIETY.—7½ P.M. Meeting of Council.—8 P.M. Dr. Barnes's Inauguratory Address.—Mr. Reeves, "On some Cases of Excision of the Hip- and Knee-joints."—Mr. Corner, "On Excision of the Elbow."—Mr. Rendle, "On Excision of the Hip-joint."

Friday, March 13.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
GUY'S HOSPITAL.—Operations, 1½ P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
ROYAL COLLEGE OF SURGEONS OF ENGLAND.—4 P.M. Mr. W. K. Parker, "On the Structure and Development of the Skull in the Vertebrata."
ROYAL COLLEGE OF PHYSICIANS OF LONDON.—5 P.M. Dr. Murchison, "On Functional Derangements of the Liver."
ROYAL INSTITUTION.—8 P.M. Weekly Evening Meeting.—9 P.M. Dr. C. R. A. Wright, "On the Chemical Changes accompanying the Smelting of Iron in Blast Furnaces."
CLINICAL SOCIETY OF LONDON.—8½ P.M. Dr. Buzzard, "On a Case of General Paralysis (both sides of Face, four Extremities, Respiration, Deglutition); Recovery under Antisyphilitic Treatment.—Adjourned Debate on the President's Address "On Pyæmia."

Saturday, March 14.

HOSPITAL FOR WOMEN Soho-square.—Operations, 9½ A.M.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M.
KING'S COLLEGE HOSPITAL.—Operations, 1½ P.M.
ROYAL FREE HOSPITAL.—Operations, 9 A.M. and 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
ROYAL INSTITUTION.—3 P.M. Mr. C. T. Newton, "On Ephesus."